CONCEPTUAL SITE MODEL, ENVIRONMENTAL SETTING AND SITE DESIGN REPORT

CROFT QUARRY
MARION'S WAY
CROFT
LEICESTERSHIRE
LE9 3GP

Document Reference: AI1009/07.R0
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Project Quality Assurance
Information Sheet

CONCEPTUAL SITE MODEL, ENVIRONMENTAL SETTING AND SITE DESIGN REPORT CROFT QUARRY, MARION'S WAY, CROFT, LEICESTERSHIRE, LE9 3GP

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CONCEPTUAL SITE MODEL, ENVIRONMENTAL SETTING AND SITE DESIGN (ESSD) REPORT

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1.0 INTRODUCTION

1.1 Report Context

1.1.1 Sirius Environmental Limited (Sirius) has been commissioned by Aggregate Industries UK Limited ('AI'), to prepare an application to vary Environmental Permit: EPR/EB3708GW to add a waste recovery activity involving the permanent deposit of wastes to support the restoration of Croft Quarry, Marion's Way, Croft, Leicestershire, LE9 3GP. AI are seeking to commence restoration of the quarry void which will bring the final restored levels to below those of the surrounding natural ground levels. As part of this application, it is necessary to prepare an Environmental Setting and Site Design (ESSD) Report. This report has been prepared in accordance with Environment Agency's ESSD guidance (last updated 21st April 2021).

1.1.2 The waste recovery operations will partially fill the void created by previous granite extraction operations. The quarry void space will require restoration material of an approximate volume of 14,000,000 m^3. This will comprise of low risk imported selected non-biodegradable, non-hazardous wastes. Such wastes which will not undergo any significant physical, chemical or biological transformations and as such will result in negligible pollution potential with respect to the production of landfill gas or leachates.

1.1.3 The restoration proposals will also incorporate a wetland habitat that will also provide long-term flood attenuation for the surface water run-off from the surface of the restored quarry void, and the retained quarry sidewalls which is currently managed within the quarry void area. The approved scheme of restoration will ensure that restoration levels will reach approximately 15mAOD. Additionally, the restoration profile will ensure that the adjacent geological SSSI located within Croft Quarry is preserved. The restored quarry floor will consist primarily of shallow reed bed wetlands with a variety of grassland types interspersed with native woodlands.

1.1.4 An Environmental Risk Assessment has been undertaken which encompasses a qualitative assessment of the risk to the local environment, amenity and human health assessment. An Hydrogeological Risk Assessment has also be prepared to considered the risk to groundwater. These risk assessments have been completed in accordance with the requirements of the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

1.1.5 In addition to including a Deposit of Waste for Recovery Operation to EPR/EB3708GW, this application seeks to extent the waste treatment activities currently permitted at the quarry.

1.1.6 This report conceptualises the site in terms of the potential source pathway and receptors relationships to support the various risk assessments required to support the Environmental Permit Variation Application. These risk assessments (and relevant engineering and environmental controls) are presented in the relevant sections of the main application document.

1.1.7 Furthermore, this document seeks to provide a statement of condition for areas which will not receive permanent deposits of waste.

1.2 Site Details

Location & Access

1.2.1 Croft Quarry is located immediately to the north of the village of Croft and approximately 500m to the south-west of the village of Huncote, Leicestershire. The application site has a postcode of LE9 3GP and is centred on a National Grid Reference (NGR) of SP 51269 96539. The location of the quarry relative to its surrounding is presented on **Drawing Nos. AI1009/14/01, AI1009/14/02 and AI1009/14/06**. The entire Croft Quarry site extends over an area of ~111.5ha, of which the quarry void footprint will occupy ~ 48ha.

1.2.2 Access to the site is via Marion's Way located along the southern boundary of the quarry which connects to Coventry Road.

Site Classification

1.2.3 The application will vary the current permitted physical treatment of waste activity to extend the existing Environmental Permit Boundary to extend the operational areas in which the waste treatment and storage activities will be conducted, and include a waste recovery operation that involves the permanent deposit of waste.

Application Boundaries and Site Security

1.2.4 The extended Environmental Permit boundary and the operation extents of each waste activity are depicted in **Drawing No.: AI1009/14/02**. The site location in relation to the wider geographical setting is presented in **Drawing No.: AI1009/14/01.**

1.2.5 Access to Croft Quarry will be restricted for the duration of restoration operations (including aftercare). Furthermore, existing perimeter security fencing and CCTV infrastructure will be maintained. The waste restoration operations will be supported by the existing weighbridge facilities at the quarry, although the location of this infrastructure will be adapted under current and future redevelopment opportunities.

Adjacent Former Waste Management Licences

1.2.6 The applicant currently operates a physical waste treatment activity for the production of soil, soil substitutes and aggregates. This is currently permitted to be carried out within the south-eastern extents of Croft Quarry under Environmental Permit EPR/EB3708GW. The operational extents of the permitted waste treatment activities will be extended to accommodate additional treatment processes and stocking areas.

1.2.7 The concrete block manufacturing facility operated by AI is also permitted to physically treat off-specification products under Environmental Permit EPR/CB3808XH. The permit boundary for these operations extends up to the southeastern edge of the proposed extended boundary for Environmental Permit EPR/EB3708GW

1.2.8 The Envirocheck report presented in **Appendix ESSD1** does not indicate the presence of any registered active landfills in close proximity to Croft Quarry, although two historical landfill facilities are recorded.

1.2.9 The first of these historical landfill facilities is identified in the Envirocheck report as Croft Landfill. The footprint of Croft Landfill is located within the Croft Quarry

ownership boundary; ~600m southeast of the quarry void. Environment Agency and British Geological Survey records suggest that this landfill was operated by Land & Properties (ECC) Limited and that the landfill was active between 1937 and 1989; with the original license surrendered in 1978. It is also stated that only waste produced on site was deposited and that the authorised wastes comprised of cement asbestos, construction/demolition wastes, industrial non-hazardous waste, mine/quarry wastes and oil from interceptors. This area has since been restored and at present is largely undeveloped with the exception of the southwestern portion which has been redeveloped to an industrial land use; plant buildings.

1.2.10 The second historical landfill site has been identified as Cheney End, which is located ~1.1km northeast of the proposed quarry complex. No information regarding the operator of this landfill is available but Environment Agency records indicate that this historical landfill site operated between 1935 and 1965 and accepted industrial, commercial and household waste. This area has been restored and has been redeveloped for residential land use.

1.2.11 It is important to note that the Croft Landfill covers a large area and is bounded on the east and south-east by the Thurlaston Brook and River Soar respectively. Additionally, the historic landfill is partially overlain by the landscaping mound created to facilitate existing quarrying activities and shall be retained. Given the age of this landfill it is unlikely that it features any engineered containment to provide protection to the environment. As such, it may present an ongoing off-site contaminant source term from the deposited waste mass. This potential for leachate dispersal is also present at the Cheney End historical landfill.

1.2.12 Due to the vertical disconnect between the historic landfills and the proposed waste deposits within the Croft Quarry void, it is considered that the proposed Deposit of Waste for Recovery Operations will not impact or disturb either historic landfill site.

Site Context

1.2.13 Croft Quarry is a long-established hard rock quarry with extraction occurring since 1886. Croft Quarry expanded and in 1919 employed over 400 hands, the 1920s and 1930s saw the introduction of the concrete works, which remain on site today. The 1980's Huncote Quarry and Croft Quarry merged creating the foot print we see today. By 1995 the lateral extension was granted planning permission by Leicestershire County Council in February 1995. The planning permission was subject to a Review of Mineral Planning Permissions (ROMP) by Leicestershire County Council in 2010. The current permission includes a further lateral extension and final restoration scheme for Croft Quarry which was approved by Leicestershire County Council on 12th January 2022.

1.2.14 Croft Quarry complex occupies an area of ~111.5ha, of which the footprint of the quarry void for restoration will occupy an area of ~48ha; as shown in **Drawing No. AI1009/14/02**. The remaining parts of the quarry complex outside of the main void footprint will be restored using a combination of site-derived overburden and mineral fines/waste materials. The restoration of these areas of the quarry using site derived materials does not form part of the waste operations for which a permit is being sought.

1.2.15 Areas associated with Croft Quarry and other AI operations provide separation of at least ~50m between the operational areas of the quarry and the nearest residential receptors around most of the site, however, there are a few receptors that are located closer to/on the Croft Quarry boundary.

1.2.16 A number of residential properties are located along the southern boundary of Croft Quarry, with many; including The Heathcote Arms, situated along Huncote Road which runs adjacent to the southern and western boundaries of Croft Quarry. Further residential properties located within ~300m of the southern and western boundaries of Croft Quarry and located on Thurlaston Road, Stanton Lane and Marston Road. Thurlaston Road, Stanton Lane, Station Road and Marston Road.

1.2.17 Thurlaston Brook and the River Soar extend along Croft Quarry's eastern and southern boundaries respectively. Beyond Thurlaston Brook are large areas of agricultural land and the village of Huncote which is located ~500m northeast of Croft Quarry. Beyond the River Soar to the south lies a mainline railway track, the village of Croft; which is located ~325m south of Croft Quarry and covers an area of ~32ha, and agricultural land.

1.2.18 The existing site comprises operational mineral extraction areas, areas undergoing restoration, the current mineral processing plant, concrete block works and recycling and associated areas of hardstanding and open storage. These operations are set behind mature vegetation (including perimeter hedgerows) and developed woodland.

1.2.19 A summary of surrounding land uses, features, classifications, and receptors is included within **Table ESSD1**. These features are visually depicted in **Drawing Nos.: AI1009/14/07 and AI1009/14/11.**

Table ESSD1: Local land uses, features, classifications and receptors and their relevant distances from the site (within 1km)

ID	Receptor Name	Type of Receptor	Approximate nearest distance from the operational boundary	Direction from the permit boundary
R1	Croft and Huncote Quarry	Site of Special Scientific Interest	On-Site	N/A
R2	Croft Hill	Site of Special Scientific Interest	Adjacent	Northwest
R3	The Huncote New Hill Nature Reserve	Local Nature Reserve & Local Wildlife Site	Adjacent	East
R4	Public Footpaths	Public Right of Way	Adjacent up to 440m	North and South
R5	Coventry Road (B4114)	Public Highway	~550m	South
R6	Croft Hill Road	Public Highway	Adjacent	North
R7	Thurlaston Lane	Public Highway	Adjacent	North
R8	Huncote Road	Public Highway	Adjacent	West
R9	Stanton Lane	Public Highway	Adjacent	West
R10	Marston Road	Public Highway	Adjacent	Southwest
R11	South Leicester Railway	Public Transportation	Adjacent	South
R12	Croft Village	Residential/Recreational/ School	Adjacent	South
R13	River Soar, Thurlaston Brook and Broughton Astley Brook	Water Body and Local Wildlife Site	Adjacent	East and South
R14	Residential Properties along Huncote Road	Residential	Adjacent	West
R15	Agricultural Land	Agricultural	Adjacent up to 1km	All Directions

ID	Receptor Name	Type of Receptor	Approximate nearest distance from the operational boundary	Direction from the permit boundary
R16	Residential Properties along Marston Road	Residential	Adjacent up to 240m	West
R17	Winston Avenue	Commercial/Industrial	~30m	South
R18	Croft Pasture and Roadside Verge	Site of Special Scientific Interest & Local Wildlife Site	Adjacent to 70m	Southwest
R19	Huncote Village	Residential/Recreational/ School	~350m	Northeast
R20	Residential Properties on Stanton Lane	Residential	~290m to 600m	West
R21	Standalone Residential Properties	Residential	~500m to 950m	East, South
R22	Three Boundaries Business Park	Commercial/ Industrial	~700m	South
R23	Elms Farm Industrial Park	Commercial/ Industrial	~850m	Northeast

1.2.20 The operational extents of the permanent deposit for recovery and waste treatment activities are defined in **Drawing No. AI1009/14/02**. The waste related restoration operations will be restricted to the Croft Quarry void, as illustrated in **Drawing No. AI1009/14/03.** The waste treatment operations will be carried out in the wider operational area to the south of the void, as illustrated in **Drawing No. AI1009/14/04.** For the duration of waste operations, the existing perimeter security fencing will be maintained.

Topography

1.2.21 Croft Quarry is located on the eastern side of Croft Hill which rises to a summit at ~128mAOD immediately to the west of the quarry void. Natural ground levels at Croft Quarry typically fall to the east and south towards the River Soar (south) and Thurlaston Brook (east).

1.2.22 The topography of land surrounding the quarry void is relatively flat lying with the exception of a landscaped hillside on the north-eastern boundary that is the product of overburden stripping.

1.2.23 A topographical survey of the quarry indicates that the rim of the quarry (at natural ground levels) typically ranges from c. 110mAOD in the west falling to c.80mAOD in the south, north and east.

1.2.24 The quarry has been worked in a series of benches to a maximum depth (January 2017) of c. 139mBOD giving a maximum quarry depth of up to 230m.

Compliance with the EA Approach to Managing and Protecting Groundwater

1.2.25 The waste operations proposed to be operated at Croft Quarry constitutes a non-landfill waste operation that involves the permanent deposits of waste. This activity is therefore considered against Position Statement F1 of the EA approach to the managing and protecting groundwater.

1.2.26 The development site is not located within a Source Protection Zone 1 (SPZ1) and therefore it accords with the decision framework for Position Statement F1 under “The Environment Agency’s Approach to Groundwater Protection” (v1.;

Nov 2017). Nonetheless, as the quarry void is situated sub-water table within both a Secondary B bedrock aquifer this triggers the requirement for a Hydrogeological Risk Assessment (HRA) (please refer to *Doc. Ref.: AI1009/08).*

2.0 SOURCE

2.1 Site Development

Sources of Information

2.1.1 The baseline of this report has been determined from a review of available published information, including:

- Landmark Envirocheck Report (**Appendix ESSD1**);
- BGS 1:50,000 scale geology maps;
- Environment Agency web-based data;
- Data.gov.uk website; and
- DEFRA's MAGIC website.

2.2 Historical Development

Historical Use of Land

2.2.1 The development history of the permitted facility has been established through a review of available historical county series, ordnance survey and online maps. Details of the site history is provided in **Table ESSD2.**

Table ESSD2: Development history of site and surrounding land

Date	On site	Surrounding Land
1886	Much of the application site remained as agricultural land, with an unidentified building in the centre of the application site. Quarrying operations (with associated tramways) extended into the south of the site. A further quarry was indicated to the north of the application site. A 'powder magazine' was located within the application site	Local land use was dominated by agricultural fields. The South Leicester railway branch line is to the south of the application site and the village of Croft, with a rail spur that served the Site. A 'smithy' was indicated to the north of the Site adjacent to the northern area of quarry operations
1904	Quarrying activity from Croft Quarry extended into the application site from the south. A powder magazine was present adjacent to the northern quarry. A 'reservoir' was located in the western section of the application site	Granite, brick and concrete works were now identified within the wider Croft Quarry complex
1919	Croft Quarry now extended further into the application site. The quarry in the north of the application site was now identified as Huncote Quarry	A tramway was now indicated to lead from Huncote Quarry to Narborough Quarry to the north-east
1938	No identifiable changes. A number of 'tanks' are identified within or close to the application site	No significant changes
1955	Both Croft Quarry in the south and Huncote Quarry in the north have continued to expand, however Huncote Quarry was indicated to be disused	Narborough Quarry to the northeast, and the associated tram link to Huncote Quarry appeared disused. A 'sewage farm' was present to the east of the Site. Industrial buildings associated with Croft Quarry continued to be developed
1967-1968	Croft Quarry had expanded significantly across the application site with multiple quarry benches indicated	No significant changes, except for local Residential development
1973	Croft Quarry had expanded significantly across the application site	No significant changes
1980-1982	No significant changes	No significant changes

Date	On site	Surrounding Land
1993	Croft Quarry appeared to have expanded further, extending to Croft Hill Road in the west and with extraction operations now encroaching on land originally associated with Huncote Quarry	No significant changes with the exception of further development of the Croft Quarry operational and production areas
2000	Croft Quarry now appeared to extend to cover an area consistent with the present day and has absorbed the originally dormant Huncote Quarry.	No significant changes, except for possible overburden placement across unworked areas of the wider site.
2016	No significant changes	No significant changes, except for additional landscaping with quarry overburden and development of the production plant.

Other Relevant Land Uses

2.2.2 There are no other relevant land uses which may have given rise to potential sources of non-waste related contamination at Croft Quarry.

Incidents

2.2.3 There are no environmental incidents that require discussion.

2.3 Proposed Development

2.3.1 The proposed restoration scheme for Croft Quarry comprises of the infilling of both the main quarry void and the lateral extension area with a combination of site-won overburden material and imported restoration material to achieve the approved restoration scheme and profiles presented in **Drawing Nos.: C14_LAN_035** & **C14_LAN_039** respectively.

2.3.2 It is important to highlight that the proposed restoration scheme does not seek to restore the quarry void to the original (pre-extraction) ground level. Instead, the restoration schemes will result in maximum restoration levels of 15mAOD (approximately 55m below surrounding ground levels. These restoration levels have been selected to preserve the Croft Quarry Geological SSSI, which would be lost should restoration levels progress to initial pre-extraction levels.

2.3.3 Using the final site levels presented in **Drawing No.: 8100/CA/16b**, numerical void modelling has identified that in order to achieve the approved restoration profile approximately 14 million m^3 of suitable restoration material will need to be imported over a 20-year restoration schedule; which will equate to up to 750,000m^3 of imported material per annum. This volume of imported restoration material is in addition to the 3.17 million m^3 of site derived overburden.

2.3.4 Based on an assumed average material density of 1.8 t/m^3 the proposed restoration volumes would equate to a total of 25.2 million tonnes (corresponding to c. 1.35 million tonnes per annum) of suitable restoration material being imported to support restoration activities.

2.3.5 The proposed restoration scheme for Croft Quarry incorporates priority BAP habitats and species and known on site features of biodiversity value. In addition to the habitats already restored at the site, the proposed restoration will create a mosaic of habitats which will compensate for the habitat loss incurred during the operation of Croft Quarry, as shown in **Drawing No.: C14_LAN_035.**

Proposed Waste Types

2.3.6 The ensure that the waste accepted onto the site is suitable for the intended purpose, the site will accept selected non-biodegradable, non-hazardous wastes. Such wastes which will not undergo any significant physical, chemical or biological transformations and as such will result in negligible pollution potential with respect to the production of landfill gas or leachate. These wastes include materials associated with The Landfill Tax (Qualifying Materials) Order 2011 (SI 2011 No.1017), which defines the categories of materials to which the lower rate of landfill tax applies, due to their benign nature.

2.3.7 A full list of proposed infill materials is presented in the Waste Recovery Plan **(Doc. Ref.: AI1009/03)** that supports this application. In summary, these waste will largely comprise a range of suitable construction, demolition, excavation, mineral, thermal process wastes.

2.3.8 The restoration of the Croft Quarry will be completed using a phased approach. Restoration activities will be undertaken concurrent to a lateral extension extending into the eastern wall of the existing quarry void, although mineral extraction operations are currently suspended at the quarry.

2.3.9 The lateral extension of Croft Quarry will require the stripping of approximately 3.17 million m^3 of overburden from the excavation area. The overburden will initially be stored on site and subsequently used during the initial infilling phases of the approved restoration scheme due to lack of available storage space. Site derived overburden will be used to supplement the imported waste during restoration activities. Once this supply has been exhausted, restoration will continue using imported waste only. The base of the overburden is depicted in **Drawing No.: 8100/CA/16b.**

2.3.10 Following the stripping of the overburden, aggregate will be extracted from the lateral extension area to the agreed basal levels as shown in **Drawing Nos.: C14_LAN_037, C14_LAN_038** and **C14_LAN_039**. Cross-sections showing the extent of the excavation within both the main Quarry void (elevation units in mAOD) and the lateral extension area shown in **Drawing No.: C14_LAN_039**.

2.3.11 The stripping of overburden, extraction of aggregate and the restoration of the site will follow a phased approach. Indicative details of this phasing are visually depicted in **Drawing Nos.: C14_LAN_036, C14_LAN_037 and C14_LAN_038.**

2.3.12 An indicative conceptualisation of how future mineral extraction and restoration operations will progress is depicted in **Drawing No. AI1009/14/03.**

Hydrogeological Risk Screening

2.3.13 Schedule 22 from The Environmental Permitted (England and Wales) Regulations 2016 covers all aspects in relation to groundwater activities. The regulations provide a consolidated system of environmental permitting relating to the relevant functions, granting of an environmental permit as well as the groundwater activities for which a permit may be granted.

2.3.14 The waste-recovery operations at Croft constitute a Groundwater Activity under Schedule 22 of EPR2016 on the basis that it has the potential to lead to the indirect discharge of pollutants to groundwater. The direct discharge of substances to groundwater will be prevented via the construction of a Artificially Established Geology Barrier along the base and sidewalls of the quarry.

Final Landform and After-Use

2.3.15 The proposed restoration scheme for Croft Quarry comprises of the infilling of both the main quarry void and the lateral extension area with a combination of site-won overburden material and imported restoration material to achieve the approved restoration profile presented in **Drawing No.: C14_LAN_039.**

2.3.16 It is important to highlight that the proposed restoration scheme does not seek to restore the quarry void to the original (pre-extraction) ground level. Instead, the restoration schemes will result in maximum restoration levels of 15mAOD (approximately 55m below surrounding ground levels). These restoration levels have been selected to preserve an element of the Croft Quarry Geological SSSI, which would be lost should restoration levels progress to initial pre-extraction levels.

2.3.17 The proposed restoration scheme for Croft Quarry incorporates priority BAP habitats and species and known on site features of biodiversity value. In addition to the habitats already restored at the site, the proposed restoration will create a mosaic of habitats which will compensate for the habitat loss incurred during the operation of Croft Quarry, as shown in **Drawing No.: C14_LAN_035.**

2.3.18 The restoration scheme proposes the creation of the following habitats at Croft Quarry:

- **Bare Ground** – A UK priority habitat which will be generated naturally without any human intervention. Although this will be a slow process it will enable a natural balance of species to develop with Croft Quarry;
- **Grassland** – Grassland generated during restoration will consist of species rich grassland with wet marginal grassland adjacent to reed beds and water body, acid grassland and heath-grassland;
- **Woodland** – The establishment of new woodland areas and the extension pre-existing woodland areas consisting of a mix of native species;
- **Wetlands** – A pool and a number of channels lined with reed beds with extend over the restored quarry floor. The wetland area will consist of an irregular shoreline and depths to allow for a greater variety of species to thrive.

2.3.19 **Drawing No.: C14_LAN_035** demonstrates the completed restoration of the site following the cessation of restoration material importation, when the site will be returned to a mixture of grassland, woodland, and wetland. It is important to note that the proposed restoration preserves the Geological SSSI contained within the void of Croft Quarry.

2.3.20 In addition to the creation of priority BAP habitats; and associated improvement to local biodiversity, the restoration of Croft Quarry would remove a potential risk to public health and safety and a potential centre for antisocial behaviour. If Croft Quarry was left unrestored, the unmaintained quarry faces would pose a risk to both local residents in adjacent properties and members of the public visiting Croft Quarry for the Geological SSSI. Furthermore, an unrestored Croft Quarry has the potential to become a centre of antisocial behaviour which would cause distress and disturbance to the local residents and deter members of the public from visiting the Croft Quarry SSSI and surrounding points of interest (including Croft Hill SSSI).

2.3.21 Due to the nature of the proposed restoration profile, it is considered that the current quarry water management scheme remains valid to support Croft Quarry during restoration. As with other operational site documents, the quarry

water management scheme will be reviewed at defined intervals and updated as required. A copy of the Envireau Water (2010) Report and Croft Quarry Void Water Management Plan Schematic are presented in **Appendix ESSD2.**

3.0 PATHWAYS AND RECEPTORS

3.1 Climate

3.1.1 Regional climate data has been sourced from recording stations located at Earl Shilton Weather Station and Coventry Airport, which are located approximately 4.5km northwest and 27km southwest of Croft Quarry respectively.

3.1.2 Average monthly and annual rainfall depths and rainfall days are presented in **Table ESSD3**. The average annual mean rainfall for this area is 674.8mm.

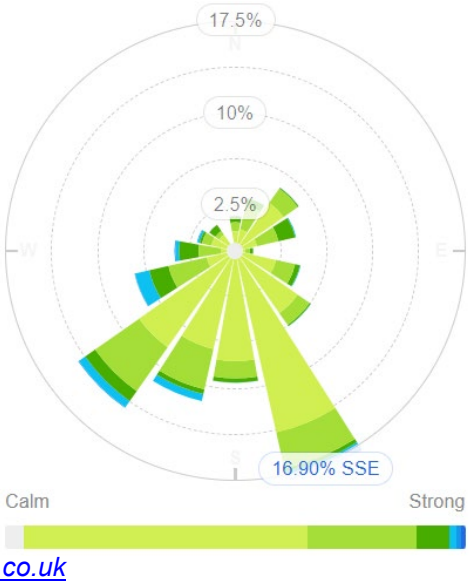
Table ESSD3: Average rainfall and days of rainfall (>1mm) at Earl Shilton (1981-2010)

Month	Rainfall (mm)	Days of rainfall >= 1 mm (days)
Jan	56.4	11.5
Feb	40.0	9.5
Mar	44.7	11.2
Apr	49.7	10.1
May	57.5	9.5
Jun	55.6	9.2
Jul	60.0	8.4
Aug	62.0	9.1
Sep	65.3	9.5
Oct	66.8	10.6
Nov	60.2	11.1
Dec	56.7	11.6
Annual	674.8	121.3

3.1.3 A wind rose based on the five-year mean of meteorological data recorded at Church Lawford (~22km south of Croft) is presented in **Figure ESSD1**. The predominant wind direction is presented in **Figure ESSD1** which depicts prevailing winds are from the south-southeast, with a significant contribution from the south to southwest. Winds from these directions amount to ~52% of the wind. A higher proportion of strong winds are received from the southwest and west.

Figure ESSD1: Five-year (2018-2023) average wind statistics for Church Lawford

Direction	Proportion
N	2.60%
NNE	4.00%
NE	5.73%
ENE	4.60%
E	1.32%
ESE	4.93%
SE	6.81%
SSE	16.90%
S	9.75%
SSW	11.38%
SW	14.18%
WSW	7.63%
W	4.5%
WNW	2.91%
NW	2.37%
NNW	0.00%



Source: www.willyweather.co.uk

3.2 Geology

3.2.1 The geology of Croft Quarry is taken from:

- the British Geological Survey (BGS) 1:50,000 scale Sheets 169 (Coventry) and 155 (Coalville) solid and drift editions;
- Logs of gas and groundwater monitoring boreholes installed between September and December 2017 (Presented in **Appendix ESSD3**);
- Logs of historical boreholes drilled at and in the vicinity of the site (available from BGS Onshore Viewer); and
- Carney JN (2010). Magma mixing in the South Leicestershire diorite: evidence from an Ordovician pluton at Croft Quarry, Mercian Geologist, 17 (3). 166-172.

Superficial Geology

3.2.2 The regional superficial geological sequence in the vicinity of Croft Quarry is presented in **Table ESSD4.** The distribution of local superficial deposits, as taken from published BGS mapping, is illustrated in **Drawing No. AI1009/14/08.**

Table ESSD4: Regional Superficial Geology

Period	Epoch	Stage	Formation	Member	Lithology & Notes
Quaternary	Holocene	Devensian to Holocene		Head	Poorly sorted and poorly stratified, angular rock debris and/or clayey hillwash and soil creep.
				Alluvium	Clay, silt, sand and gravel
	Pleistocene	Blue Anchor Mudstone		1st Terrace: Sand & Gravel	Sand and gravel, locally with lenses of silt, clay or peat.
				2nd Terrace: Sand & Gravel	
			Soar Valley Formation	Syston Sand & Gravel Member	Sand and gravel with minor clay and silt lenses. **Site borehole logs suggest these fluvial deposits may form a part of the uppermost section of the full drift sequence (where present) underlying the Proposed Extension. However, insufficient information exists to definitively assign the sand and sands & gravels encountered by Site drilling to either a glaciofluvial or fluvial origin (or both).**
				Wanlip Sand & Gravel Member	
		Anglian	Wolston Glacio-genic Formation	Glaciofluvial & Glacio-lacustrine Deposits	Sand and Gravel. Detrital, generally coarse-grained, forming beds, channels, plains and fans associated with meltwater. **Site borehole logs suggest these glaciofluvial deposits may form a part of the uppermost section of the full drift sequence (where present) underlying the Proposed Extension. However, insufficient information exists to definitively assign the sand and sands & gravels encountered by Site drilling to either a glaciofluvial or fluvial origin (or both).** Mottled grey and brown stiff plastic clays and silty clays with little or no gravel content. **Site borehole logs suggest these glaciolacustrine deposits form part of the upper section of the full drift sequence (where present) underlying the Proposed Extension, these materials being logged by AI geologist as "Glacial Clays".**

Period	Epoch	Stage	Formation	Member	Lithology & Notes
				Oadby Till Member	Diamicton (Till), grey, weathering brown, characterised by Cretaceous and Jurassic rock fragments; subordinate lenses of sand and gravel, clay and silt. **Site borehole logs record these deposits to form the lower part of the full drift sequence (where present) underlying the Proposed Extension.**
				Thrussington Till Member	Diamicton (Till), brown to reddish-brown with stones and matrix derived primarily from Upper Carboniferous and Triassic rocks; subordinate sand, gravel and stoneless clay and silt. **Site borehole logs record these deposits to form the lowest part of the full drift sequence (where present) underlying the Proposed Extension.**
		Cromerian	Bytham Sand & Gravel Formation		Fluvial, lacustrine and organic deposits commonly commencing with a basal coarse-grained gravel overlain by red fine- to medium-grained sand. The gravels are composed of Triassic grey and purple quartzite, vein quartz, Jurassic limestone and ironstone, and Carboniferous sandstone and chert. **BGS mapping shows these deposits to be absent from the immediate area of the Site.**

Glacial Deposits

3.2.3 The base of the local superficial sequence comprises pervasive till (boulder clay) of the Oadby Till and overlying Thrussington Till Members of the Wolston Formation which mantle the majority solid geological strata of the local area.

3.2.4 The Oadby and Thrussington Till can be distinguished by the presence of Cretaceous and Jurassic rock fragments within the clay matrix of the former, whilst the rock clasts held by the latter tend to derive from Upper Carboniferous and Triassic rocks.

3.2.5 The till of the Wolston Formation is shown by BGS mapping to be intermittently overlain by glaciofluvial deposits of generally limited areal extent, these being noted by the BGS to comprise principally sands and sands and gravels.

3.2.6 Although not shown by BGS mapping, examination of local borehole logs shows the presence of glaciolacustrine clays within the vicinity of the Site.

3.2.7 These deposits are generally described as mottled grey and brown stiff plastic clays and silty clays with little or no gravel content.

3.2.8 BGS borehole logs shows significant variation in the thicknesses of all glacial deposits within the region, channel fill and erosion comparison on the basis of unit thickness.

Fluvial Deposits

3.2.9 BGS mapping shows the valleys of the River Soar and its tributaries to the south of the Site and the Thurlaston Brook to the north and east to be mantled by fluvial drift deposits.

3.2.10 These deposits typically comprise river terrace sands and gravels, these being the first and second terraces of the River Soar and Thulston Brook.

3.2.11 The terrace deposits are typically mapped to overlie glacial deposits, although on occasion where glacial deposits are shown to be absent, the sands and gravels are mapped to directly overlie bedrock.

3.2.12 The river terrace deposits are in turn overlain by a thin cover of alluvium associated with recent depositional phase of the recent history of the local watercourses.

3.2.13 The long history of mineral extraction at the Site has removed drift deposits across the quarried area, however, substantial thicknesses of superficial cover upon Mercia Mustone bedrock strata within the eastern and south-eastern parts of the quarry site.

Exploratory Investigations

3.2.14 Information from several series of mineral evaluation drilling programmes undertaken at the quarry has been collated and reviewed, as summarised in **Table ESSD5.**

Table ESSD5: Superficial Geology in the lateral extension area

Lithology	Probable Stratigraphic Correlation	Thickness (m)	General Description given by AI Drill ogs
Sands, Sand & Gravels, Clayey Sands & Gravels	River Terrace Sands & Gravels and / or; Soar Valley Formation Sands & Gravels, and / or Glaciofluvial Sands & Gravels of the Wolston Glaciogenic Formation.	0 to 6.6 Av.4.1	Encountered in 5-no. of 9-no. site investigation boreholes. Orange brown, 10% to 60% fine to coarse quartzite and flint gravel. Clean to Silty with occasional clayey sand gravel lenses and silt lenses. Cobbles of up to 120mm recovered during drilling.
Clay	Glaciolacustrine Deposits of the Wolston Glaciogenic Formation.	0 to 21.3 Av. 13.1	Encountered in 6-no. of 9-no. site investigation boreholes. Logged as “Glacial Clays”. Brownish grey and mid to dark grey, firm to very stiff, occasionally soft, plastic play with little or no gravel. Rare gravels are chalk fragments of up to 10mm diameter.
Till	Oadby and Thrussington Till Members of the Wolston Glaciogenic Formation.	0 to 19 Av.6	Encountered in 7-no. of 9-no. site investigation boreholes. Oadby Till: Mid to dark grey and brownish grey, firm to stiff clay with 10mm to 20mm chalk gravel, fine grained sandstone, flint, grey siltstone and occasional quartz diorite cobble. Occasional lenses of fine sand. Thrussington Till: Reddish Brown, slightly silty to silty, firm to stiff clay with fine to coarse, pale grey (occasionally weak) sandstone gravel.

Note: Superficial deposits are present beneath a variable thickness of made ground comprising crushed aggregate fill that has accumulated over the long history of quarrying at the Site

3.2.15 Although the presence and thicknesses of individual superficial units that remain in the lateral extension area varies considerably between individual boreholes, the following composite general sequence overlying Mercia Mudstone Group strata within the lateral extension is evident from examination of drill logs, as summarised in **Table ESSD6.**

3.2.16 The combined thickness of superficial cover present within the Site ranges from 0m to c.45m, typically thickening to the south and east as the underlying bedrock falls away; the base of the superficial cover falling here from c.75mAOD to c.30mAOD.

Table ESSD6: Summary borehole Logs for 2018 Site Investigation Drilling in the lateral extension area

BH I.D	Sand, Sand and Gravel, Clayey Sand and Gravel			Glaciolacustrine Clay			Till			Mercia Mudstone Group		
	From (mAOD)	To (mAOD)	Thk (m)	From (mAOD)	To (mAOD)	Thk (m)	From (mAOD)	To (mAOD)	Thk (m)	From (mAOD)	To (mAOD)	Thk (m)
2018/1*				64.7	48.9	15.8	48.9	41.5	7.4	41.5	-15.9	57.4
2018/2	69.7	65.7	4	65.7	56.1	9.6	56.1	52.5	3.6	52.5	47.6	4.9
2018/3	71.3	65.9	5.4	71.3	54.7	16.6	54.7	51.3	3.4	51.3	47.6	3.7
2018/4*	72.5	69.6	2.9	69.6	68.9	0.7				68.9	28.8	40.1
2018/5*	71.8	65.2	6.6				65.2	60.7	4.5	60.7	-19.5	80.2
2018/6							72.3	71.7	0.6	71.7	65.9	5.8
2018/7*										70.7	38.2	32.5
2018/8				67.1	52.4	14.7	52.4	48.9	3.5	48.9	44.4	4.5
2018/9	67.9	66.4	1.5	67.9	46.6	21.3	46.6	27.6	19	27.6	25.9	1.7

Solid Geology

3.2.17 The solid geological sequence in the vicinity fo Croft Quarry is presented in **Table ESSD7.**

Table ESSD7: Regional Solid Geological Sequence

Period	Group	Formation	Member	Thk	Lithology & Notes
Jurassic	Lias Group	Blue Lias		Up to 140m	Thinly interbedded limestone and calcareous mudstone or siltstone. ***Not present within vicinity of Application Area***
Triassic	Penarth Group	Lilstock Mudstones		6-12m	Grey to black mudstones with subordinate limestones and sandstones. ***Not present within vicinity of Application Area.***
		Westbury Mudstone			
	Mercia Mudstone Group	Blue Anchor Mudstone		7-10m	Typically comprises pale green-grey, dolomitic silty mudstones and siltstones with thin arenaceous lenses and a few thin, commonly discontinuous beds of hard, dolomitic, pale yellowish-grey, porcellanous mudstone and siltstone. The lower boundary is marked with an abrupt or rapid upward change from the red-brown, silty mudstones of the Branscombe Mudstone Formation. ***The Blue Anchor Formation is the uppermost formation of the Mercia Mudstone Group. Not observed within the Application Area, the formation (formerly known as the Tea Green Marl) is present overlying the Branscombe Mudstone c.5.5km to the east of the Site.***
		Branscombe Mudstone		25-60m	Mudstone and siltstone, red-brown with common grey-green reduction patches and spots. The mudstones are mostly structureless, with a blocky weathering habit. Gypsum / anhydrite is common throughout in beds, nodules and veins(e.g. Tutbury Gypsum and Newark Gypsum of the East Midlands). Sporadic thin beds of argillaceous sandstone and silty dolomite occur in the lower part of the formation. Beds of thinly interlaminated, dark grey-green mudstone and dolomitic siltstone occur locally towards the top of the formation. ***Not observed within the Application Area, the Branscombe Mudstone is present overlying the Sidmouth Mudstone c.1.5km to the east of the Site.***
		Sidmouth Mudstone	Edwalton Mudstone	35-50m	Mudstone and siltstone, red-brown and greenish grey, with beds of indurated, variably dolomitic siltstone and very fine-grained sandstone common in the lower half; finely disseminated gypsum common in upper half, structureless at base.

Period	Group	Formation	Member	Thk	Lithology & Notes
					Lower boundary marked by abrupt or rapid downward transition from reddish brown structureless mudstone to interbedded green mudstone and pale grey fine-grained sandstone of the Cotgrave Sandstone Member. ***Considered to form the upper part of the mudstone exposure of the northeast quarry face. Also observed within boreholes drilled within current plant area.***
			Cotgrave Sandstone	1-5m	Sandstone, fine to medium-grained dolomitic, pale greenish grey, interbedded with mudstone and siltstone, dark greenish-grey. Common gypsum nodules. Lower boundary is conformable at the abrupt base of the lowest pale grey sandstone bed of the Cotgrave Sandstone Member where it overlies the red-brown mudstone of the underlying Gunthorpe Member. ***The c.1.3m thick bed of sandstone exposed within the upper part of the north-eastern quarry face and recorded within boreholes drilled at the Site is considered to be the Cotsgrave Sandstone or an associated skerry.*** The Cotgrave Sandstone is shown by 1:50,000-scale BGS mapping to outcrop at c.80mAOD to the west of the Site. Triangulation with borehole logs from the quarry plant area implies a very shallow (c.1:85: c.0.7˚) broadly eastward to east-south-east dip.
			Gunthorpe Mudstone	160-200m	Mudstone, red-brown, with subordinate dolomitic siltstone and fine-grained sandstone, greenish grey, common gypsum veins and nodules. Conformable, gradational downward passage from blocky, deformed mudstone into dominantly finely laminated mudstone and sandstone of Radcliffe Member. ***Considered to form the lower part of the mudstone exposure of the northeast quarry face. Also observed within boreholes drilled within current plant area.***
			Radcliffe Mudstone	10-45m	Mudstone, siltstone and very fine-grained sandstone, finely interlaminated; pinkish red or red-brown, subordinately green. ***Present at depth beneath Site.*** The upper boundary of this member within the vicinity of the quarry is inferred by the available data to reside at c.140mBOD (+/-35m). Given the steeply sloping form of the quartz diorite pluton worked at the quarry, the Radcliffe Formation is considered likely to be present at depth upon the fringes of the Application boundary, but well beyond the area of current or proposed quarrying.
Ordovician	South Leicestershire Diorite Complex			Un-known	Quartz Diorite intrusive. *The economic mineral of the Site.*

South Leicestershire Diorite Complex: Quartz Diorites

3.2.18 The quartz diorites extracted at the site are part the calc-alkaline South Leicestershire Diorite Complex (SLDC), a composite pluton believed to be of c.14km to c.16km diameter and which forms a part of the early Palaeozoic basement of the East Midlands region.

3.2.19 The SLDC outcrop quarried at the Site is one of 3No. large scale groups of outcrop observed within the region, these outcrops occurring between the town of Enderby (c.2.5km northeast of the Site) and the village of Sapcote (c.3.3km south west).

3.2.20 Geological logs of mineral evaluation boreholes drilled at the site and observations of exposure within quarry faces characterise the SLDC as a dark grey medium grained diorite with some quartz veining.

3.2.21 Quarrying operations at the Site have proven the presence of the SLDC to a depth of c.136mBOD, whilst exploratory drilling has confirmed its continued presence to c.149.5mBOD. However, given the plutonic form of the intrusion, quartz diorite strata are almost certain to be present for many hundreds of metres below the quarry floor of the Site.

3.2.22 The SLDC was intruded during the Late Ordovician period into mudstones of the Lower Cambrian to early Ordovician Stockingford Shale Group (StSG).

3.2.23 It is thought that the magmas of the SLDC were generated in an island arc setting above a subduction zone situated to the east of the present-day English coastline in a tectonic event associated with the plate convergence closure of the Tornquist Sea.

3.2.24 Strata of the StSG that hosted the intrusion of the quartz diorites are not seen at outcrop in the region, erosion of these (and later) sediments produced a mountainous landscape dominated by promontories of more resistant igneous intrusives.

3.2.25 These promontories were later almost entirely buried by extensive sedimentation during the Triassic Period, the SLDC being concealed throughout most of the UK East Midlands by a thick (up to c.350m) sequence of mudstones and siltstones of the Mercia Mudstone Group.

Mercia Mudstone Group

3.2.26 The Mercia Mudstone Group is of regional extent, its strata forming uppermost bedrock over much of the UK Midlands.

3.2.27 Locally, the strata are seen to thin to absence upon the flanks of SLDC intrusions, exposing diorite beneath superficial deposits and soils upon the hills of the area.

3.2.28 The Mercia Mudstone forms the upper eastern and southeastern faces of the quarry where it has been stripped to facilitate access to the underlying quartz diorite.

3.2.29 The buried flanks of the SLDC intrusion that form Croft Hill and host Croft Quarry dip steeply away from the hillside such that the quartz diorite becomes overlain by a rapidly increasing thickness of onlapping Mercia Mudstone sediments with distance away from the Site.

3.2.30 BGS borehole records show that all but 1No. of the 9No. boreholes of sufficient depth to penetrate the base of the Mercia Mudstone in the vicinity of Croft Quarry record the mudstones to be directly underlain by either Lower Coal Measures sediments or much older Cambrian or Pre-Cambrian sediments or intrusives. This implies the presence of a major unconformity at the base of the Mercia Mudstone, whereby, amongst other strata, rocks of the Sherwood Sandstone Group are entirely missing from the local geological sequence.

3.2.31 Site drilling logs and inspection of quarry faces shows the local expression of the Mercia Mudstone conforms with its regional characterisation as a reddish brown mudstone with a weathered clayey surface, featuring silty / sandy layers of decreasing presence with depth.

3.2.32 Site drilling logs show occasional interbeds of pale greenish grey sandstones of up to 1.6m thickness to exist within the Mercia Mudstone; quartz diorite fragments are also recorded within its contact zone with the underlying SLDC.

3.2.33 Site drilling logs show the base of the Mercia Mudstone within the lateral extension area falls from c.45mAOD in the west to c.10mBOD in the east.

3.2.34 The thickness of Mercia Mudstone strata within the lateral extension area thus ranges from c.20m to c.80m thick, thickening south and eastwards as the flanks of the quartz diorite intrusion slope rapidly away from the rim of the quarry.

Geological Structure

3.2.35 BGS mapping does not indicate the presence of any faulting or other notable structural features in the vicinity of the Site.

3.3 Hydrology

3.3.1 The hydrology of the quarry is taken from Ordnance Survey topographical maps, water quality monitoring undertaken in the vicinity of the application site, information provided by the Environment Agency and information provided by Aggregate Industries regarding their water management scheme in the current extraction area in the application site. The main hydrological features in the vicinity of the proposed quarry are shown on **Drawing Nos.: AI1009/14/09** and **AI1009/14/10.**

3.3.2 The application site is located in the catchment of the River Soar River which rises approximately 9.5km southwest of the quarry from where it flows generally east then north before flowing east passing approximately 150m to the south of the quarry footprint. The River Soar has a confluence with Thurlaston Brook and Broughton Astley Brook along the south-eastern boundary of the application site. Subsequently the River Soar continues to flow eastwards until the confluence with the River Sence; approximately 3.7km to the east of the quarry. Beyond this confluence the River Soar flows north thorough Leicester and Loughborough before discharging into the River Trent approximately 34km north of the application site. Only lagoons and connecting drains associated with surface and ground water management operations are present within the quarry void footprint and wider quarry. The watercourses closest to the quarry void are the River Soar; which flows within the application site boundary and Thurlaston Brook which flows southwards adjacent to the application site's eastern boundary.

3.3.3 There are five quarry water management areas associated with current operations at Croft Quarry. The existing quarry water management strategy is based on the capture of all runoff from the quarry void and main production area that either flows naturally or is pumped into a series of settlement lagoons. As previously mentioned, five quarry water management areas cover Croft Quarry, and these are summarised in **Table ESSD8** below.

Table ESSD8: Water Management Areas with Croft Quarry

Water Management Area	Description
Area A	Located in the southwestern corner of the application site and consists of the Aggregate Industries' office area; including historic buildings associated with Croft Village. Runoff collected from this area enters into an engineered drainage network associated with the road drainage network before entering into the River Soar
Area B	Encompasses the quarry void; which covers ~47% of the current operational area. Runoff within this management area cannot escape the quarry void and collects in the

Water Management Area	Description
	base of the void at a water sump. This water is pumped c. 550m to a storage tank from which it is either discharged into the River Soar or utilised for on-site activities Water utilised in on-site activities in treated in a lagoon system prior to discharge into the River Soar. The lagoons at the application site have a freeboard storage accommodation of 5,000m^3.
Area C	Extends along the eastern site boundary and comprises of a landscaped and vegetated overburden hillslope. Runoff from this area either infiltrates into the ground/flows overland towards Thurlaston Brook or the River Soar.
Area D	Covers the main production area and also a portion of the landscaped overburden. The main production area predominantly consists of engineered hardstanding, with runoff captured by engineered drains. These drains then direct the runoff into the settlement lagoons.
Area E	Covers the southern portion of the application site and consists of hardstanding product storage areas and also the Croft Quarry access road. Runoff from the storage area is either captured by engineered drains or flows overland into the River Soar, with road runoff flowing overland or via a drainage ditch into the Broughton Astley Brook.

3.3.4 The settlement lagoons also act as storm attenuation areas for large storm events. A schematic of the current water drainage and discharge networks at the Croft Quarry complex is present in **Appendix ESSD2**. This will be adapted slightly as the site is developed in line with recently acquired planning consent, although the general principle will remain unchanged. A conceptualisation of how groundwater and surfaces waters will be managed within the quarry void during infilling is presented in **Drawing No.: AI1009/14/03**.

3.3.5 It is understood that the areas of open water in Croft Quarry are supported on the remaining South Leicestershire Diorite Complex which will lie beneath the proposed waste recovery deposits. It is understood from Aggregate Industries that the lagoons utilised on site are excavated into the superficial glacial deposits and that the lagoons are lined with concrete to prevent any infiltration into superficial deposits. The collected runoff is transported to the settlement lagoons and around the site through buried engineered drains. Furthermore, there are two of ponds located with 500m of the application site's southwestern boundary. These are thought to be naturally formed as associated with the River Soar.

Discharge Consents

3.3.6 There is a total of five licenced discharges to surface water within 1km of Croft Quarry. Summary details are presented in **Table ESSD9**. Two consented discharges relate to Aggregate Industry's quarry/mineral activities which discharge into the River Soar. These two discharges are located along the southern edge of the mineral processing area with the first located approximately 200m west (upstream) of where the quarry access road crosses the River Soar. The second discharge is located approximately 100m east (downstream) of where the quarry access road crosses the River Soar. **Drawing No.: AI1009/14/09** depicts their locations. In addition to the two

aforementioned discharge consents there are four other consented discharges to the River Soar or tributaries of the River Soar within 1km of the application site. Copies of the discharge consents held by AI are presented in **Appendix ESSD4**.

Table ESSD9: Summary of active Discharge Consents to surface water within 1km of the site

Location	Details
Croft, Leicestershire Distance 0m S NGR: 451500, 295900	Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: Dt/8045 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar (Tributary) Status: Pre National Rivers Authority Legislation where issue date <01/09/1989
Winston Avenue Croft Cso Winston Avenue, Croft, Countesthorpe, Leicestershire, LE9 3GQ Distance: 0m S NGR: 451484, 295878	Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Catchment Area: Not Supplied Ref: Tsc4121 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar Status: Varied under EPR 2010
Croft Quarry Marian's Way, Coventry Road, Croft, Leicestershire, LE9 3GP Distance: On-site NGR: 451580, 295920	Operator: Aggregate Industries (UK) Limited Property Type: Undefined or Other Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: T/50/08259/T Discharge Type: Trade Discharge – Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar Status: Pre National Rivers Authority Legislation where issue date <01/09/1989
Croft Quarry Marian's Way, Coventry Road, Croft, Leicestershire, LE9 3GP Distance: On-site NGR: 451820, 296090	Operator: Aggregate Industries (UK) Limited Property Type: Undefined or Other Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: T/50/45029/T Discharge Type: Trade Discharge – Mineral Workings Discharge Environment: Freshwater Stream/ River Receiving Water: River Soar Status: Post National Rivers Authority Legislation where issue date >31/08/1989
Huncote, Leicestershire Distance: 200m, NW NGR: 451700, 297400	Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: Dt/8047 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Thurlaston Brook (River Soar) Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989

Surface Water Quality

3.3.7 Based on the information presented on the Environment Agency Catchment Data Explorer website under the Water Framework Directive classification the ecological quality of the River Soar is currently 'moderate', whilst chemical quality is currently 'fail' . All chemical classification items associated with the River Soar are classed as 'good', except for Polybrominated diphenyl ethers (PBDE) and Mercury which are classed as 'fail'. Additionally, ecological and chemical quality of Thurlaston Brook was also identified with these being classified as 'poor' and 'fail respectively.

3.3.8 Review of available geological and hydrogeological records undertaken as part of this application has identified that the aforementioned surface water features

are disconnected from the underlying groundwater held within the Mercia Mudstone and Diorite, with only groundwater held within the superficial deposits contributing to baseflow in these rivers. Additionally, it was confirmed that all on-site run-off associated with the site offices, treatment/manufacturing operations, quarry void and storage areas is collected by the site's drainage system and is directed into lined settlement lagoons. The run-off is then held within these lagoons and either utilised as process water on-site operations, following which it is treated and discharged into the River Soar via a licensed and monitored discharge point (Ref: T/50/08259/T) or discharged directly into the River Soar via a second licensed and monitored discharge point (Ref: T/50/45029/T). It was noted that overland flow to surrounding surface water features is permitted around Croft Quarry, however, the areas where this is permitted are not areas associated with main site operations/proposed waste recovery operations and instead comprise of landscaped/vegetated surfaces and ancillary transport routes (site access road). In light of this interception of run-off and single discharge point via two licensed and monitored surface water discharge points it was considered that background surface water quality monitoring is not required to support this application.

Abstraction Licences

3.3.9 There is one active licensed surface water abstractions within 2km of Croft Quarry, details of which are summarised in **Table ESSD10**. The details of this licensed surface water abstraction are presented in **Appendix ESSD1**. The approximate location of this surface water abstraction is shown on **Drawing No.: AI1009/14/09**. There are no other active licensed surface water abstractions within 2km of the application site.

Table ESSD10: Details of licensed surface water abstraction within 2km of the site

Location	Details
Croft Quarry - River Soar Distance: Adjacent NGR: 451669, 295947	Operator: Aggregate Industries UK Limited License No: 03/28/50/0097 Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction type: Water may be abstracted from a single point Source: Surface

3.3.10 There are no water dependent Sites of Special Scientific Interest within c. 2km of the application site.

Flood Risk

3.3.11 The Landmark Envirocheck report indicates that the Croft Quarry void is at risk from surface water flooding. This risk ranges from very low to high and is attributed to the accumulation of rainwater within the void. Additionally, the eastern boundary of the application site with entire site is within Flood Zone 2 and Flood Zone 3 of the Thurlaston Brook watercourse. The southern boundary of the application site also falls within Flood Zone 2 and Flood Zone 3 of the River Soar. Due to the lateral distance between these flood risk zones and the proposed void, alongside the absence of historical (including geological) indicators of flooding the quarry void has been deemed as not at risk of fluvial or coastal flooding.

3.3.12 Surface and ground waters within the quarry are appropriately managed within the confines of the quarry and discharged to surrounding surface water course under appropriate regulatory consent.

3.4 Hydrogeology

Background

3.4.1 The hydrogeological regime of the Site and its surrounding areas has been elucidated on the basis of:

- OS mapping;
- EA datasets;
- Review of published and site specific geological data;
- Groundwater level measurements made within piezometers installed at the Site;
- The occurrence and elevation of local groundwater dependent features such as springs and rivers;
- Site reconnaissance, and;
- Experience of similar hydrogeological terrains within the British Isles.

Hydrostratigraphy & Aquifer Characteristics

Sands & Gravels and Sands

3.4.2 The fluvioglacial and / or fluvial sands and gravels and sands comprising the near surface deposits over parts of the lateral extension and over a wide area extending onto the floor of the adjoining Soar Valley comprise a Superficial Aquifer capable of storing and transmitting significant quantities of groundwater.

3.4.3 Groundwater movement within the Superficial Aquifer is made by intergranular flow occurring within the interconnected pore spaces that exist between the sand and gravel matrix of the deposit a characteristic which is termed intergranular permeability.

3.4.4 The Superficial Aquifer forms an unconfined granular aquifer featuring diffuse, intergranular groundwater flow, and is assumed to be largely homogenous and anisotropic.

3.4.5 Recharge to the Superficial Aquifer is diffuse and chiefly autogenic, being sourced directly from effective rainfall.

Glacial & Glaciolacustrine Clays

3.4.6 Due to an effective absence of any interconnected porosity (i.e. permeability), the glaciolacustrine clays and underlying tills (the Oadby and Thrussington Till) of the Wolston Formation that underlie the sands and gravels and sands (where present) to the south, east and west have negligible ability to store or transmit groundwater.

3.4.7 These clay deposits thus constitute an aquiclude of substantial thickness that serves to separate groundwater within the overlying sand and gravel from any underlying groundwater bodies that may exist.

Mercia Mudstone Group

3.4.8 Again, due to an absence of any effective permeability, the mudstone facies of the Mercia Mudstone Group which underlie the superficial clays and its wider area also have negligible ability to transmit and store any significant volumes of groundwater. Groundwater storage and movement within the Mercia Mudstone is therefore limited to the numerous but generally very thin sandstone beds (skerries) contained within it.

3.4.9 Due to the consolidated nature of these sandstone horizons, in addition to possessing intergranular permeability, these strata also have the ability to convey groundwater through the fracture system of the rock (termed fracture permeability or secondary permeability). The Mercia Mudstone as a whole thus functions as a series of interbedded aquifers and aquicludes: the aquifers constituted by the sandstone units which are subordinate in the group, and the aquicludes constituted by the mudstone units which dominate the sequence.

3.4.10 Collectively these aquifers and aquicludes form a vertically anisotropic aquifer (the Mercia Mudstone Aquifer) in which vertical movement of groundwater is extremely limited.

3.4.11 This dictates that recharge to the groundwater systems of the sandstone units occurs chiefly around areas where these units outcrop at or very close to ground surface.

3.4.12 The moderate topographic relief and almost horizontal bedding of the Mercia Mudstone in the region mean that few areas of outcropping sandstone occur, this imposing a further limit on the potential utility of the Mercia Mudstone a viable aquifer unit.

Quartz Diorite

3.4.13 The Quartz Diorites of the South Leicestershire Diorite Complex are considered to possess very limited aquifer properties.

3.4.14 Due to its crystalline nature, the strata possess no effective primary porosity and thus no primary (intergranular) permeability.

3.4.15 That groundwater movement which does occur within the strata will be made entirely within a secondary porosity flow system comprising interconnected factures and joints, albeit that this latter component is likely to be of very limited importance due to mineralisation closure.

3.4.16 It follows that groundwater storage and flow within Quartz Diorite will be greatest where the fracture system is most well developed.

3.4.17 Due to stress relief caused by unloading of the rock by mineral extraction and the long history of blasting undertaken at the Site, enhancement of the hydraulic conductivity of strata within proximity of the void (underlying and laterally adjoining) is likely to have occurred.

Aquifer Boundaries

Vertical Boundaries

3.4.18 The Superficial Aquifers are unconfined, with their upper boundaries being formed by the ground surface.

3.4.19 The Mercia Mudstone Aquifer is overlain by the low permeability clay aquiclude of the Wolston Formation, the interface with which forms its upper boundary.

3.4.20 The upper boundary of the Diorite Aquifer is formed by its interface with the Mercia Mudstone Aquifer, low permeability horizons within which serve to hydraulically separate the two Aquifer units.

3.4.21 The full depth of the Diorite Aquifer is not known, though its lower boundary is formed by the vertical limit of its effective permeability which will decrease rapidly with depth with declining mass fracture intensity and aperture.

Lateral Boundaries

3.4.22 The lateral boundaries of the Superficial Aquifer are formed by the limit of its distribution, this being confined to the edges of the valleys of local surface watercourses.

3.4.23 The Mercia Mudstone Aquifer has a generally ubiquitous presence throughout the region and is thus considered to be of effectively unlimited extent at the scale of interest. Exceptions to this occur in areas where the Quartz Diorite is present at outcrop above onlapping Mercia Mudstone or where the Mercia Mudstone has been removed by quarrying: in such cases the lateral boundaries of the Mercia Mudstone Aquifer are formed by its contact with the Diorite.

3.4.24 The full lateral extent of the strata comprising the Diorite Aquifer is unknown; however, as the effective permeability of the strata will decline rapidly with depth and the overwhelming majority of the strata exists at great distance below ground, the lateral limits of groundwater circulation are likely to be restricted to areas immediately surrounding or close to outcrop.

Internal Boundaries

3.4.25 Surface watercourses flowing upon the Superficial Aquifer will form internal boundaries to groundwater flow, in the main acting as a drain for groundwater, but also having the potential to act as a linear recharge boundary during periods of low groundwater levels.

Formal Aquifer Classification

3.4.26 The glaciofluvial and / or fluvial sands and gravels and sands that constitute the near surface deposits present within parts of the quarry site and which extend away from the Site to mantle the valley floors of the area are designated by the EA as a "Secondary A Superficial Aquifer". This designation implies: *"…permeable layers that can support local water supplies, and may form an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers".*

3.4.27 The glaciolacustrine clays and underlying tills of the Wolston Formation underlying the sands and gravels and sands (where present) currently located within the lateral extension area and its surrounding areas to the east, south and west are designated by the EA as a "Secondary (undifferentiated) Superficial Aquifer". This designation implies: *"Secondary undifferentiated are aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value."*

3.4.28 Notwithstanding the difficulties associated with ascribing a designation within the EA's current classification scheme, the almost entirely argillaceous nature of the clays and tills defines them as a non-aquifer.

3.4.29 The Mercia Mudstone - which constitutes bedrock immediately underlying superficial deposits across the entire area (with the exception of the upper flanks and top of Croft Hill where Quartz Diorite is present at outcrop) - are designated as a "Secondary B Bedrock Aquifer" by the EA: *"Secondary B aquifers are mainly lower permeability layers that may store and yield limited amounts of groundwater though characteristics like thin cracks (called fissures) and openings or eroded layers".*

3.4.30 The quartz diorite which constitutes the economic mineral of the Site and underlies the Mercia Mudstone (where present) across the Site area, is also designated by the EA as a "Secondary B Aquifer".

WFD Groundwater Body & Management Unit Designation

3.4.31 The Site is entirely located within the Soar (Secondary Combined) Groundwater Body of the WFD Humber Groundwater Management Unit (GWMU).

Groundwater Resource Availability

3.4.32 In relation to any proposals for new groundwater abstraction in the region, the local CAMS states that "water (is) available for licensing". In common with the policy approach to surface water abstraction, any new groundwater abstractions will be subject to a HOF of 340 Ml/d in circumstances where continuity exists between groundwater and a surface watercourse.

Drinking Water Safeguard Zones: Groundwater

3.4.33 The Site (or any part of its district) is not located within any Drinking Water Safeguarding Zone for groundwater (DWSZgw).

Groundwater Vulnerability Zonation

3.4.34 DeFRA groundwater vulnerability mapping shows areas of River Terrace Deposit in the vicinity of the Site to be classified as "Minor Aquifer, High Vulnerability" with respect to the susceptibility to percolation of contaminants spilled at ground surface.

3.4.35 Areas of Alluvium in the Site vicinity, where not underlain by river terrace deposits, are mapped as "Minor Aquifer, Low Vulnerability".

3.4.36 Wolston Formation deposition cover areas where superficial deposits are absent (including areas of Mercia Mudstone and Quartz Diorite outcrop) are not classified with respect to groundwater vulnerability and as they are not considered vulnerable to percolation of contaminants from the ground surface.

Nitrate Sensitive Zonations

3.4.37 The local area does not contain any designated Nitrate Vulnerable Zones for groundwater.

Source Protection Zones

3.4.38 Groundwater Source Protection Zones (SPZs) are defined by the EA around groundwater sources used for public water supply. They show the risk of contamination from any activities that may cause pollution, posed to the associated source(s).

3.4.39 Reference to EA mapping shows there to be no SPZs within an area in excess of 10km from the quarry.

Piezometers

3.4.40 A programme of investigatory drilling and piezometer installation was undertaken at the quarry.

3.4.41 Piezometer, BH03A, was installed to monitoring groundwater levels within the Superficial Aquifer.

3.4.42 Piezometers BH02A, BH03B and BH04A were installed with the intention of measuring groundwater levels within the Mercia Mudstone Aquifer, with the latter 2.No. fully penetrate the group and provide representative data, although the former has been recorded as dry since installation.

3.4.43 Piezometers BH01, BH02B, BH03C and BH04B, were installed to measure groundwater levels within the Diorite Aquifer, all partially penetrating (due to the great thickness of diorite). However, BH04B became blocked in 2019.

3.4.44 Measurements of groundwater levels within the piezometers have been made between April 2018 and to June 2022, the data being included here at **Appendix ESSD5** and summarised along with brief piezometer installation details in **Table ESSD11.**

Table ESSD11: Piezometer water levels (April 2018-June 2022)

I.D	NGR		Cap (mAOD)	Base (mAOD)	Depth (m)	Groundwater Level (mAOD)				Piezometer Response Zone
						Min	Mean	Max	Range (m)	
BH01	451079	296841	94.04	-147.96	242	-70.46	-65.57	-37.76	32.7	Diorite
BH02A	451364	296135	73.88	45.88	28	WIB				Mercia Mudstone
BH02B	451359	296133	74.02	-146.98	221	-55.88	-53.62	-50.87	5.01	Diorite
BH03A	451630	296449	74.67	71.27	3.4	71.08	72	73.47	2.39	Superficials (Clayey Gravel)
BH03B	451627	296467	74.67	16.67	58	19.07	20.18	21.99	2.92	Mercia Mudstone
BH03C	451629	296457	74.78	-142.22	217	-50.58	-47.93	-39.92	10.66	Diorite
BH04A	451441	296135	68.43	-8.07	76.5	38.62	40.43	41.93	3.31	Mercia Mudstone
BH04B	451446	297128	68.70	-149.10	217.8	-16.83	-16.22	-15.2	1.63	Diorite

WIB: Remnant water in base of piezometer (i.e. dry)

3.4.45 Geological and piezometer installation logs are included here at **Appendix ESSD3**, the location of piezometers are illustrated in **Drawing No. AI1009/14/??.**

3.4.46 There are no piezometer data which pre-date the 2017 programme of installation, thus there is no direct evidence regarding the evolution of any changes that might have occurred to local groundwater levels as a result of the history of quarrying at the Site.

Groundwater Levels & Flow Direction

Superficial Aquifer

3.4.47 The depth to groundwater within the Superficial Aquifer recorded at piezometer BH03A ranges between 0.9m below ground level (mBGL) and 3.3mBGL during the monitoring period.

3.4.48 The temporal average elevation of groundwater at this piezometer is 72mAOD, some 5.5m above that of the stage level of the River Soar on its reach through the southern part of the quarry works complex.

3.4.49 There are insufficient piezometers to allow the groundwater flow direction within the Superficial Aquifer to be precisely defined on the basis of piezometer data

alone. However, it is considered extremely likely that groundwater within the section of Superficial Aquifer underlying the lateral extension is flowing generally south-eastwards towards the River Soar into which it must drain and thus contribute to baseflow.

3.4.50 The shallow depth to groundwater within the Superficial Aquifer underlying the extension area is typical of such deposits.

3.4.51 There is no evidence or suggestion from the piezometer data that the quarry void and associated long-history of dewatering has affected groundwater levels within the Superficial Aquifer.

Mercia Mudstone Aquifer

3.4.52 The data shows the depth to groundwater within the Mercia Mudstone Aquifer at piezometer BH03B, where groundwater level ranges between 52.7mBGL and 55.6mBGL, whilst at piezometer BH04A the depth to groundwater is recorded at between 26.5mBGL and 29.8mBGL.

3.4.53 The temporal average elevation of groundwater levels within the Mercia Mudstone Aquifer was recorded at piezometers BH03B and BH04A. The levels are 20.2mAOD and 40.4mAOD respectively and thus between c.53m and c.29m below that of groundwater contained within the Superficial Aquifer.

3.4.54 The considerable (c.20m) difference in groundwater elevation measured at the two piezometers is considered to be a facet of the high degree of vertical and horizontal anisotropy present within the aquifer. This anisotropy is evidenced by examination of the borehole logs: piezometer BH03B intercepts a 3m thick layer of sandstone within the upper profile of the Mercia Mudstone, whereas no significant sandstone horizons were encountered within piezometer BH04A.

3.4.55 The piezometers providing representative head measurements are of insufficient number to allow the groundwater flow direction within the Mercia Mudstone Aquifer to be inferred from piezometer data.

3.4.56 However, the large depth to groundwater within the Mercia Mudstone Aquifer (c.54.4mbGL at BH03B and c.27.3mbGL at BH04A) in a district where there are no other obvious points of discharge from the aquifer to suppress levels strongly suggests that groundwater levels within this aquifer have been drawn-down over the long history of quarry dewatering undertaken at the site.

3.4.57 Examination of geological mapping indicates that the total potential area for efficient recharge to the Mercia Mudstone (i.e. sandstone horizons at outcrop) is very limited in the vicinity of the quarry or in the wider district. In addition, vertical recharge to the sandstone horizons of the Mercia Mudstone Aquifer made through the mudstone facies of the Mercia Mudstone will almost certainly be negligible. These factors conspire to severely limit the amount of water recharging the thin sandstone and siltstone horizons of the Mercia Mudstone.

3.4.58 Whilst downward leakage from these horizons in response to groundwater drawdown within the underlying Diorite Aquifer (effected by quarry dewatering) will be extremely sluggish, it is evident that there is insufficient recharge to the Mercia Mudstone Aquifer to replenish that small rate of groundwater loss to induced downward leakage. In view of the foregoing factors, the drawdown that appears to have been imposed upon groundwater levels within the local section of the Mercia Mudstone Aquifer is considered unlikely to have reached equilibrium. Thus, further drawdown, albeit of very sluggish procession, is anticipated with continued dewatering at the current quarry sump level.

Diorite Aquifer

3.4.59 The collected data shows the depth to groundwater recorded at the 4No. piezometers installed to measure levels in the Diorite Aquifer (piezometers BH01, BH02B, BH03C and BH04B) to range between 81.4mbGL and 164.5mbGL.

3.4.60 The data reveals that groundwater levels within the Diorite Aquifer are consistently and substantially below those within the overlying Mercia Mudstone Aquifer.

3.4.61 Where heads in the two aquifer units are measured by adjacent piezometer pairs (BH3B & BH3C and BH4A & BH4B), the separation of groundwater levels during the monitoring period between the aquifers ranges between c. 56m and c. 70m.

3.4.62 The 4No. individual piezometers installed within the Diorite Aquifer display a similar groundwater level response to variations in rainfall recharge indicating a reasonable degree of homogeneity.

3.4.63 It is important to recognise that the conformity between individual piezometers of the groundwater level response to varying rainfall recharge indicated by the data does not imply either rapid movement or large quantities of groundwater flow.

3.4.64 Of exception to this are the relatively amplified groundwater level variations recorded at piezometer BH01 which displays a range between minimum and maximum level over the monitoring period of almost 33m whereas the average range in the remaining 3No. Diorite Aquifer piezometers is c. 5.8m. This is considered attributable to the lack of Mercia Mudstone cover in the area surrounding piezometer BH01, which is positioned on the mid slopes foot of Croft Hill. The absence of overlying deposits in this area will facilitate considerably greater rainfall recharge to the aquifer than can occur around the areas of the remaining 3No. piezometers where the Diorite is concealed beneath both low permeability superficial cover and a considerable thickness of Mercia Mudstone deposits.

3.4.65 The data also show that groundwater elevations within the 4No. piezometers measuring heads within the Diorite Aquifer generally fall on approach to the quarry void.

3.4.66 The water level contained within the quarry sump is currently c.136 mBOD; average groundwater elevations measured at piezometers BH01, BH02B, BH3C and BH4B, all positioned at increasing distance from the void, are 65.6 mBOD, 53.6 mBOD, 47.9 mBOD and 16.2 mBOD respectively. As with the Mercia Mudstone Aquifer, the available data is of limited duration and there are no data that span any phase of quarry deepening at the Site, thus direct evidence of the evolution of groundwater level response within the Diorite Aquifer to quarrying and dewatering is unavailable. Nevertheless, applying the same principles that have been applied to consideration of likely groundwater level behaviour within the MERCIA MUDSTONE, we can assess the groundwater level behaviour in the Diorite Aquifer. There are no other obvious points of potential groundwater discharge other than via quarry dewatering. The large depth to groundwater within the Diorite Aquifer compared to the River Soar level strongly suggests that groundwater levels within this aquifer have been drawn-down over the many years of dewatering undertaken at the quarry.

3.4.67 Interpretation of the available data - alongside application of simple hydrogeological principles - indicates that groundwater within the Diorite Aquifer near the Quarry is flowing radially towards the void via the interconnected parts of the rock's fracture network.

3.4.68 The results of a water balance present in **Appendix ESSD6** suggests a total groundwater input to the quarry of between c.8 l/s and 12 l/s. Despite the considerable area and great depth of the void, relatively little groundwater interception occurs. This then demonstrates that the volumes of groundwater flowing within the Diorite Aquifer are very small. This implies that the Diorite possesses both limited transmissivity and limited recharge, both factors which accord with the general hydraulic nature of the strata and its geological setting beneath low permeability Triassic and Superficial cover. In turn this implies that the limit of discernible groundwater level drawdown attributable to the quarry dewatering operation (i.e. the radius of influence) will most likely be contained within a radius measurable in hundreds of metres rather than several kilometres away from the quarry sump.

3.4.69 Prior to the commencement of dewatering at the Site the groundwater level within the Quartz Diorite would have been close to ground surface. Although there is no piezometer data available to support this conceptualisation, this is evidenced by the fact that following cessation of dewatering, and given sufficient time, abandoned quarries within the South Leicestershire Diorite Complex become almost entirely inundated with rainfall and groundwater ingress. For instance, since the cessation of dewatering at Stoney Cove Quarry, situated c.2.6km south-west of the Site, water levels within the former workings have risen to almost entirely fill the quarry void and regular pumping from the lake to an adjoining surface watercourse is required to control water levels. It follows that the natural undisturbed mode of discharge from the Diorite Aquifer at Croft prior to quarrying and dewatering was made as lateral recharge to adjoining permeable fluvial and glaciofluvial deposits and thence to the River Soar and Thurlaston Brook. Therefore the mass effect of dewatering, wherein groundwater and rainfall ingress to the quarry are pumped to the adjoining River Soar, is largely that of a simple short-circuiting of the pre-existing natural system.

Water Balance

3.4.70 A water mass balance review for the quarry was reviewed by BCL Hydro in 2019 to provide an estimate of the groundwater ingress into the current quarry void. A copy of the water balance calculation are presented in **Appendix ESSD6.**

3.4.71 Data was collected by Aggregate industries utilizing the instrumented components of the site's water management system in order to construct a mass balance, aiming to estimate the rate of groundwater ingress into the quarry void. The calculations assumed that the rim of the quarry void serves as the sole catchment for rainfall ingress, and that no process waster is returned to the quarry void. Rainfall ingress volumes were estimated using monthly effective rainfall totals determined from on-site rain gauge data, whilst pumped discharge volumes that are recorded from the quarry sump to storage tanks were used to establish monthly waster pumped from the quarry void. The pumped discharge volumes included both rainfall and groundwater ingress.

3.4.72 It should be noted that there was a poor short-term correlation between the derived effective rainfall and measured pumped volume data, attributed to changes in stored water volumes. However, the pumped volumes consistently exceed rainfall input, enabling estimation of groundwater ingress volumes.

Without taking the effects of evaporation into consideration, the water balance revealed that pumping more water than the rainfall input resulted in a groundwater influx rate of about 8 litres per second. When accounting for evaporation using effective rainfall values, the implied rate increased to around 12 litres per second.

3.4.73 To cross-check results, the water balance calculation included monthly changes in volume and level of water stored on the quarry floor due to short-term imbalances. These values supported the overall confidence in the water balance calculation, suggesting a reasonable portrayal of groundwater ingress rates. Consequently, the calculated rate of groundwater ingress to the quarry void was estimated to be in the range of approximately **8 to 12 litres per second**. Given the quarry's significant depth and large area, this rate is considered relatively low, indicating limited hydraulic conductivity and connectivity with surrounding groundwater or surface water bodies.

Licensed Abstractions and Private Water Supplies

3.4.74 The application site is not located in a groundwater Source Protection Zone. The quantitative and chemical status of the groundwater body aquifer is classified by the Environment Agency as good. There are seven licensed groundwater abstractions within 2km of the of Croft Quarry. Details of the active licensed groundwater abstractions are presented in **Table ESSD12** and **Appendix ESSD1**. The approximate locations of these groundwater abstractions are shown on **Drawing No.: AI1009/14/09.**

3.4.75 No groundwater abstraction activities are undertaken within the application area. The closest groundwater abstraction is located approximately 630m to the east of Croft Quarry at Flash Farm which operated by A H Chantwell & Sons (Farmers) Limited. This abstraction involves drawing water from the underlying Mercia Mudstone Group for general farming and domestic purposes. A second groundwater abstraction is located a similar distance away from the western boundary of Croft Quarry. This groundwater abstraction point is located at Potters Kiln and operated by British Worm Breeders with the groundwater being used for spray irrigation. There are five additional wells located between 900m and 1.3km of the application site boundary with the extracted groundwater from four being utilised for general farming and domestic activities. The fifth abstraction is located to the north of the application and operated by Acresford Sand & Gravel Ltd with the groundwater being utilised for mineral washing purposes.

Table ESSD12: Details of licensed groundwater abstraction within 2km of the site

Location	Details
Potters Kiln, Nr Croft Distance: 640m W NGR: 450240, 296460	Operator: British Worm Breeders License No: 03/28/50/0125 Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Flash Farm Distance: 630m E NGR: 452700, 296600	Operator: A H Chantwell & Sons (Farmers) Limited License No: 03/28/50/0024 Abstraction: General Farming and Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Potters Marston Hall Distance: 1250m W NGR: 449700, 296300	Operator: Mr R C Holt License No: 03/28/50/0074 Abstraction: General Farming and Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Huncote, Leics - Catchpit Distance: 1030m N NGR: 451200, 298200	Operator: Acresford Sand & Gravel Ltd License No: 03/28/50/0113 Abstraction: Extractive: Mineral Washing

Location	Details
	Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Langham Bridge Farm Distance: 1210m E NGR: 453100, 296600	Operator: Mr F S Chapman License No: 03/28/50/0063 Abstraction: General Farming and Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Pingle Farm Distance: 936m NE NGR: 451900, 298300	Operator: Mr N E Shropshire License No: 03/28/50/0077 Abstraction: General Farming and Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater
Green Lodge, Huncote - Borehole Distance:1290m E NGR: 451930, 298400	Operator: Acs Limited License No: 03/28/50/0134 Abstraction: General Farming and Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater

Discharge Consents

3.4.76 There are currently two licensed discharges to groundwater/land within 1km of the site. Summary details are provided in **Table ESSD13**. Further information is presented in **Appendix ESSD1.**

Table ESSD13: Licensed groundwater or land discharges within 1km of the site

Location	Details
St Michael And All Angels Church, Hill Street, Croft, Leicestershire, LE9 3GT Distance: 68m S NGR: 451037, 296015	Operator: Mr Dennis Barrow Property Type: CHURCH / MONASTERY / ABBEY / RELIGIOUS RETREAT / ASSOCIATION HQ Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: Eprgp3427xh Discharge Type: Sewage Discharges – Final/Treated Effluent – Not Water Company Discharge Environment: Onto Land Receiving Water: Groundwater Status: New issue under EPR2010
The Toilet Block at Camas/Leics, The Toilet Block Serving The Company's Compacted Pipes Plant, Leicestershire, LE9 3GP Distance 0m NGR: 451400, 296300	Operator: Camas (UK) Ltd Property Type: Undefined or Other Catchment Area: Upper Soar Catchment to Confluence with Sence Ref: T/50/14418/Sg Discharge Type: Sewage Discharges – Final/Treated Effluent – Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Underground Strata Status: Pre National Rivers Authority Legislation where issue date <01/09/1989

Groundwater Quality

3.4.77 As previously indicated, prior to the installation of the groundwater monitoring boreholes around the periphery of Croft Quarry, no groundwater monitoring had been undertaken. As such groundwater quality data has been collected since November 2018 to establish baseline groundwater quality conditions. To ensure that sufficient data was available to support this Environmental Permit Application, groundwater quality data was collected between November 2018 and November 2023. A statistical summary of groundwater quality within the Diorite and Mercia Mudstone around the quarry between November 2018 to November 2023 is presented in **Table ESSD15**. Full datasets and time-series charts are presented in **Appendix ESSD7**.

3.4.78 Collection of groundwater samples from BH01 and BH02/A was not feasible. As such groundwater quality analysis has been undertaken using the remaining six monitoring boreholes.

3.4.79 The statistical analysis of individual boreholes indicates that for a large number of the monitored determinands, no significant variations in recorded concentrations are observed. However, variation in recorded concentrations was noted in a small number of the recorded parameters, namely, chloride, molybdenum, nickel and sulphate. It was observed that BH02/B and BH03/C installed in the Diorite contained elevate concentrations of all these parameters relative to the other groundwater boreholes, whilst BH04/B contained elevated concentrations of chloride molybdenum and nickel. The proposals regarding why these elevated levels is observed are discussed further below.

3.4.80 In addition to analysing the geochemical profiles of each individual borehole, individual groundwater monitoring boreholes were grouped together depending on which of the two major lithologies surrounding the quarry void in which they are situated (i.e. Diorite or Mercia Mudstone). These summaries were created to allow for direct comparison between these two units and identify any differences in baseline geochemical composition. Upon comparison, the geochemical profiles for both units are broadly comparable with average concentrations for all determinands, however, a few exceptions are observed in chloride, molybdenum, nickel, and sulphate. In these instances, it was identified that concentrations within the Diorite were elevated compared to the levels recorded within the Mercia Mudstone, these elevated concentrations within the Diorite are attributed to the igneous origin of the lithology and the presence of low solubility metal compounds within the secondary mineralisation. It is proposed that a small proportion of these metal compound dissolved into the water where they dissociate into their constituent ions, hence increasing the concentrations recorded in the Diorite relative to the Mercia Mudstone, which contains a lower proportion of such compounds.

3.4.81 Additionally, the results indicate that there is no negative impact on the local groundwater quality from the historic Croft Landfill which is located to the southeast of the quarry void.

3.4.82 The statistical methodology utilised in analysing the recorded background groundwater quality is that outlined in the Environment Agency Research and Development document “Techniques for the Interpretation of Landfill Monitoring Data Guidance Notes, Report No. P1-471”; which is stated in the ICoP as the preferred methodology. Accordingly, the groundwater quality monitoring records were screened utilising the P1-471 outlier test methodology discussed in Section A.3 of Report No. P1-471 and the critical values (P=1%) for the statistical Tmax presented in Table A.1 of Report No. P1-471.

3.4.83 Prior to the application of this outlier assessment tool, histograms were generated for each dataset (where applicable) to aid in the identification of whether the examined dataset of presents Normal or logNormal distribution. This confirmation of data distribution guided the subsequent statistical analysis by indicating whether the statistical analysis needed to be undertaken on the logs of the recorded datapoints. The histograms also allowed for initial visual identification of potential statistical outliers which were later confirmed during subsequent statistical analysis.

3.5 Man-made subsurface pathways

3.5.1 Other than the monitoring boreholes associated with the quarry and abstraction boreholes/wells previously discussed, other man-made pathways in the vicinity of the site are likely to include buried utility and service conduits either beneath the local road networks or within neighbouring fields. Specific details of any such

conduits have not been identified due to the associated risk with the inert waste deposits.

Table ESSD14: Baseline Groundwater Quality Summary (November 2018 and November 2023)[1,2]

Statistic	Arsenic (µg/l)	Cadmium (µg/l)	Chloride (mg/l)	Chromium (µg/l)	Copper (µg/l)	Fluoride (mg/l)	Lead (µg/l)	Mercury (µg/l)	Nickel (µg/l)	Sulphate (mg/l)	Zinc (µg/l)
BH02/B											
Min	0.501	<0.08	1.2	<1.0	<0.3	<0.5	<0.2	<0.01	0.409	177	1.22
Max	2.17	<0.08	172	1.42	5.65	0.511	0.256	0.0309	1.93	1870	10.9
Median	0.778	<0.08	90.6	<1.0	3.03	<0.5	<0.2	<0.01	0.6745	902	4.17
Mean	0.909	-	92.54	1.014	2.763	0.500	0.202	0.011	0.763	909.03	4.60
St.Dev	0.407	-	38.96	0.075	1.612	0.002	0.010	0.004	0.320	522.45	2.38
Count	31	31	31	31	31	30	31	31	30	31	29
BH03/A											
Min	<0.5	<0.08	97.1	<1.0	<0.3	<0.5	<0.2	<0.01	0.587	177	<1.0
Max	2.92	0.555	3350	13.5	25.1	0.66	0.576	0.027	4.54	1870	17.8
Median	0.6305	<0.08	298	<1.0	3.445	<0.5	<0.2	<0.01	2.56	902	4.39
Mean	0.959	0.114	727.3	1.907	5.699	0.507	0.235	0.011	2.455	909.03	5.70
St.Dev	0.640	0.095	918.95	2.570	5.873	0.031	0.105	0.003	1.027	522.45	4.34
Count	30	30	29	29	30	29	30	30	27	31	29
BH03/B											
Min	2.79	<0.08	45.3	<1.0	<0.3	<0.5	<0.2	<0.01	<0.4	121	<1.0
Max	3.73	0.287	65.9	1.01	6.48	<0.5	1.29	0.0216	0.871	136	12.2
Median	2.94	<0.08	55.6	<1.0	4.75	<0.5	<0.2	<0.01	<0.4	128	2.97
Mean	3.023	0.087	55.57	<1.0	4.206	0.500	0.254	0.011	0.481	128.37	4.30
St.Dev	0.271	0.038	3.862	0.002	1.626	0.000	0.205	0.002	0.147	4.429	3.32
Count	21	30	29	30	30	29	30	30	29	30	29

Statistic	Arsenic (µg/l)	Cadmium (µg/l)	Chloride (mg/l)	Chromium (µg/l)	Copper (µg/l)	Fluoride (mg/l)	Lead (µg/l)	Mercury (µg/l)	Nickel (µg/l)	Sulphate (mg/l)	Zinc (µg/l)
BH03/C											
Min	2.26	<0.08	50.3	<1.0	<0.3	<0.5	<0.2	<0.01	<0.4	814	<1.0
Max	3.94	0.444	73.6	1.15	2.6	0.74	0.52	0.014	1.11	1,420	16.1
Median	2.71	<0.08	55.3	<1.0	0.605	0.617	<0.2	<0.01	0.4975	1040	4.19
Mean	2.898	0.093	57.14	1.005	0.811	0.615	0.234	0.010	0.565	1067.32	4.94
St.Dev	0.485	0.069	5.470	0.028	0.626	0.067	0.087	0.001	0.208	169.57	3.83
Count	28	28	26	28	28	27	26	28	28	28	27
BH04/A											
Min	3.71	<0.08	36.7	<1.0	<0.3	<0.5	<0.2	<0.01	<0.4	171	<1.0
Max	5.3	<0.08	42.9	1.37	1.21	<0.5	0.586	0.0183	0.715	499	19.9
Median	4.34	<0.08	38.7	<1.0	0.378	<0.5	<0.2	<0.01	<0.4	380	4.58
Mean	4.37	<0.08	38.79	1.01	0.496	0.500	0.216	0.010	0.440	367.31	5.61
St.Dev	0.388	-	1.485	0.065	0.269	0.000	0.071	0.001	0.089	93.32	5.04
Count	31	32	32	32	31	31	31	32	30	32	31
BH04/B											
Min	8	<0.08	31.2	<1.0	0.225	0.375	0.15	<0.01	0.912	449	<2.0
Max	8.51	<0.08	33.1	<1.0	1.99	0.375	0.619	<0.01	4.22	479	3.89
Median	8.47	<0.08	31.9	<1.0	0.225	0.375	0.15	<0.01	1.05	472	2.34
Mean	8.33	<0.08	32.07	<1.0	0.813	0.375	0.306	0.010	2.061	466.67	2.74
St.Dev	0.284	-	0.96	-	1.019	0.000	0.271	0.000	1.871	15.7	1.01
Count	3	3	3	3	3	3	3	3	3	3	3

Statistic	Arsenic (µg/l)	Cadmium (µg/l)	Chloride (mg/l)	Chromium (µg/l)	Copper (µg/l)	Fluoride (mg/l)	Lead (µg/l)	Mercury (µg/l)	Nickel (µg/l)	Sulphate (mg/l)	Zinc (µg/l)
Diorite											
Min	0.501	<0.08	31.2	<1.0	<0.3	<0.5	<0.2	<0.01	<0.4	177	<1.0
Max	3.94	<0.08	172	<1.0	5.65	0.74	0.619	0.0309	1.29	1870	16.1
Median	1.81	<0.08	59.3	<1.0	1.22	<0.5	<0.2	<0.01	0.587	1002	3.89
Mean	1.85	<0.08	76.18	<1.0	1.789	0.552	0.22	0.011	0.657	959.11	4.66
St.Dev	1.095	-	32.98	-	1.564	0.073	0.079	0.003	0.239	406.88	3.09
Count	59	60	61	60	62	60	60	62	59	62	59
Mercia Mudstone Group											
Min	2.88	<0.08	36.7	<1.0	<0.3	<0.5	<0.2	<0.01	<0.4	121	<1.0
Max	5.3	<0.08	90	<1.0	6.48	<0.5	0.586	0.0216	0.871	499	20.6
Median	4.21	<0.08	42.25	<1.0	1.03	<0.5	<0.2	<0.01	<0.4	182.5	3.82
Mean	4.01	<0.08	47.465	<1.0	2.352	<0.5	0.217	0.010	0.460	251.69	5.24
St.Dev	0.674	-	10.408	-	2.189	-	0.067	0.002	0.122	137.58	4.72
Count	44	60	62	62	62	60	60	62	59	62	61

[1] - Where concentrations are below the laboratory reporting limit, a value equal to the LoD has been used
[2] - Statistical outliers for period removed

3.6 Receptors and Compliance Points

Controlled Waters

3.6.1 Potential receptors of waterborne contaminants from Croft Quarry are:

- Groundwater Resources
- Surface water bodies
- Abstraction points

Groundwater

3.6.2 The groundwaters within the Mercia Mudstone Group and Diorite has the potential to form the primary receptors to potential pollutants that may be released as a consequence of the waste recovery operations. For both hazardous substances and non-hazardous pollutants, the point of compliance will be edge of the site. Perimeter groundwater level monitoring indicates that the groundwaters held within the Mercia Mudstone and Diorite are vertically separated from the surface water features (incl. River Soar and associated tributaries). Consequently, it is considered that the River Soar is not fed by baseflow from the Mercia Mudstone Aquifer or Diorite. However, given the non-degradable, non-hazardous nature of the infill materials and that the proposed restoration levels will be located solely within the South Leicestershire Diorite Complex, it is considered that the likelihood for waterborne contaminants to enter the Mercia Mudstone Group are negligible.

3.6.3 Similarly, whilst groundwater is contained within the superficial deposits in the vicinity of Croft Quarry, due to the vertical separation between the infill material and the superficial deposits, the likelihood for the migration of waterborne contaminants into the superficial deposits is also considered negligible.

3.6.4 Consequently, it is considered the potential for waterborne contaminants from the Croft Quarry void to enter surrounding surface water systems by groundwater derived baseflow is negligible.

Surface Water

3.6.5 As discussed within the hydrology section, the main watercourses within the vicinity of the site are the River Soar and Thurlaston Brook.

3.6.6 Groundwater within the Superficial Deposits aquifer discharges via baseflow into the surrounding surface water features, including the River Soar and Thurlaston Brook. However, due to the vertical separation between the infill material and the Superficial Deposits, no contaminants will migrate through the Superficial Deposits and into surface water features.

3.6.7 While direct waste tipping into the void occurs, surface waters will continue to be collected and managed via the existing surface water management system (albeit adapted to as the site is redeveloped). As per the existing surface water management system, all surface water collected within the Croft Quarry void will be pumped to a settlement lagoon, recycled for on-site activities (incl. mineral washing and concrete production). No water from this area is discharged to the River Soar.

3.6.8 During and following the final stage of infilling, surface water management will not be carried out. Instead, a wetland area will be established in the restored quarry void in order to support the attenuation of adjacent site.

Amenity (Nuisance and Health Issues)

3.6.9 Details of all human, natural and cultural receptors located with 500m of the operational extents of the waste recovery activity are presented in **Table ESSD1**. In summary the nearest human receptors include users of the public rights of ways located adjacent to the eastern boundaries of the site together with residential properties within 50m of the quarry void boundary located along Hill Street to the south and Huncote Road to the west.

3.6.10 The restoration activities will be undertaken within an established quarry void and final restoration levels will be significantly below surrounding ground levels. As assessed in the Environmental & Accidents Risk Assessment (Doc. Ref.: AI1009/10), the residual impact to local receptors is considered low to negligible.

3.6.11 Operational activities on the quarry extension area will not result in any significant emissions to air, therefore there is no need to consider any other sites up to a radius of 10km beyond those identified above.

Ecology

3.6.12 There are no RAMSAR sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or National Nature Reserves (NNRs) within the nearby vicinity of Croft Quarry. However, there are three Sites of Special Scientific Interest (SSSIs) and one Local Nature Reserve within 100m of the application site boundary. One of these SSSIs; Croft Pasture, is located approximately 70m to the southwest of the application site with the remaining two SSSIs located within the application site boundary.

3.6.13 Two of the aforementioned Sites of Special Scientific Interest (SSSI) are located within the proposed site boundary; Croft Hill SSSI and Croft and Huncote Quarry SSSI. Croft Hill SSSI is located adjacent to the north-western boundary of the quarry void and has been designated as it “supports a nationally rare vegetation type of short, tussocky grasses in a rather open swarth”. This vegetation type is classified as a protected habitat (Lowland dry acid grassland) and the largest example of this grassland type in Leicestershire is situated in Croft Hill SSSI. The Croft Hill SSSI also a second type of protected habitat, deciduous woodland.

3.6.14 Croft and Huncote Quarry SSSI falls within the quarry void and has been designated as an important site “exposing tonalitic igneous rocks of Ordovician age together with attendant zeolite mineralisation, and much younger manganese mineralisation of Triassic age”. Whilst quarry restoration activities will not impact directly on the Croft Hill SSSI they will impact on the Croft and Huncote Quarries SSSI. The restoration proposals will ultimately result in net improvement and increase in the habitat created by the restoration scheme.

3.6.15 In addition to the two SSSIs within the application site boundary, the third SSSI is situated approximately 70m southwest of the application site. Croft Pasture SSSI is located on the southern bank of the River Soar and has been designated a SSSI as the site “includes unusual Leicestershire examples of acidic mixed grassland which has affinities with certain of the breckland grasslands of eastern England”. Additionally, Bullhead fish, brown trout and spined loach; protected species, have been identified as resident within the stretch of the River Soar which traverses Croft Pasture SSSI.

3.6.16 The Huncote New Hill Nature Reserve is located adjacent to the eastern boundary of the application site boundary. The nature reserve contains a variety

of habitat types including grassland, wetlands, young woodland and also houses the Croft Quarry Pond Local Wildlife Site.

3.6.17 In addition to the Croft Quarry Pond Local Wildlife Site, three other Local Wildlife Sites (LWSs) are located within 200m of the proposed site boundary. The first LWS is classified as Croft Quarry itself with the other two LWSs corresponding to the River Soar and Croft Roadside Verge. Both of which are located to the south of the proposed development.

3.6.18 The principal emissions that could potentially impact upon these designated habitats are dust. However, as discussed above, the majority of the void is located below ground level and protected from prevailing wind and gusts, which will suppress potential dust emissions from the activities. The impact on these identified habitats is examined in the accompanying, Environmental Risk Assessment (Doc. Ref.: AI1009/10). This assessment indicates that the residual impact to local habitats is considered low.

4.0 POLLUTION CONTROL MEASURES

4.1 Site Engineering

Groundwater Management System

4.1.1 Groundwaters seepages through the diorite and higher faces of the Mercia Mudstone are currently managed by collection in the base of the quarry void and pumping to the surface for initial treated (settlement) ahead of use for the production of mineral and associated products, amenity management practices or discharge to the River Soar.

4.1.2 During infilling operations groundwaters will be continue to seep in through the sidewalls above the top fo the AEGB being constructed along the sidewalls. These waters will be directed via graded channels to temporary holding lagoon collected formed in the waste surfaces prior to pumping to the surface for use or discharge.

Basal and Side Slope Engineering

4.1.3 In accordance with the requirements of Schedule 22 to the EPR2016, to prevent the potential for any direct discharges of hazardous substances to groundwater and limit the potential discharge of non-hazardous substances to groundwater within the Diorite base and sidewalls of the quarry will be lined with a Artificially Established Geological Barrier (AEGB) comprising suitable clay materials. The basal lining system will be engineered to a minimum thickness of 500mm and maximum permeability of $1x10^{-8}$ m/s.

4.1.4 Due to the near vertical gradients of the quarry sidewalls, the minimum thickness of the AEGB will be increased to 1m, whilst still achieving a maximum permeability of $1x10^{-8}$ m/s. The sidewall AEGB will also be constructed 2m high incremental lifted, buttressed internally by wastes to maintain stability. The buttress materials height will also be maintained ~1m below the top of each AEGB lift to form a rock trap, which will also redirect groundwaters and surface waters to a collection point for subsequent pumping to surface level.

4.1.5 The AEGB will be constructed using suitable site-won materials (reworked till and Mercia Mudstone) or imported wastes. A list of suitable imported wastes that will be used to support construction of the AEGB are included in **Appendix ESSD8.**

Capping

4.1.6 To maintain separation between the waste deposits and final restoration soils and waters within the wetland habitats, a 500mm capping system will be engineered to achieve maximum permeability of $1x10^{-8}$m/s.

4.2 Restoration

4.2.1 The restoration scheme agreed under the existing planning consent for the site includes for the establishment of priority BAP habitats including bare ground, grassland, woodlands, and wetlands across the area to be restored with infill materials. In order to provide a suitable growing medium for the proposed reed bed networks the final 0.5m of the infill material will consist solely of suitable imported soil forming materials or site derived overburden (if available). A list of the imported waste that will be used to form the final restoration soil profile is presented in **Appendix ESSD8.**

4.3 Surface Water Management

4.3.1 During infilling within the footprint of the quarry void groundwaters and surface waters draining form the waste surfaces will continue to be pumped to the surface for treatment ahead of use to support other waste and mineral processing activities, concrete production and wheel washing. Any excess waters will be discharged via the existing consent into the River Soar.

4.4 Post Closure Controls (Aftercare)

4.4.1 Following closure, the site will be restored, and various habitats created. There will be no subsequent aftercare or monitoring requirements owing to the nature of the waste deposited. For example, the potential for gas and leachate production will negligible, therefore, there will be no requirement to manage in-waste water levels and gas at the site.

Proposed after-use of the site

4.4.2 Following completion of the infilling activities, the void will be utilised to create wetland and ecological habitats. Following this restoration, the site permit will be surrendered. The wetland habitat created will also provide surface water attenuation to support the management of surface waters within the quarry void.

Post Closure Management of the site

4.4.3 When final levels are achieved monitoring wells will be retro drilled within waste fill materials at a spacing of 1 well per hectare in areas where thicknesses exceed 4m, as indicatively shown in **Drawing No.: AI1009/14/05**. The wells will be used to monitor the infill material for the purposes of demonstrating that the materials are stable, both physically and chemically, to enable subsequent surrender of the permit. Whilst the well spacing is less than that specified in the EA guidance (i.e. 2/ha), given the size of the site, the 18 No. wells proposed will provide sufficient representation of the waste mass.

4.4.4 Monitoring for gas will be carried out quarterly for a minimum of two years after closure of the site to support subsequent surrender of the Environmental Permit. Full details are presented in the Supporting Statement (*Doc. Ref.: AI1009/06*) submitted in support of this application.

4.5 Conditions when Permit Surrender is Acceptable

4.5.1 Permit surrender will be considered when the site has reached final levels and it has been demonstrated that the deposits are stable and do not present a risk to the environment or human health. This will be determined by appropriate monitoring and surveying of the waste deposits for a minimum period of two-years after closure. Full details of the proposed monitoring and survey requirements after closure are presented in the Supporting Statement (*Doc. Ref.: AI1009/06*) that supports this application. If after two years, the waste is assessed as stable, and in-waste gas concentration meets the criterion as set out in the relevant guidance and the Risk Assessments, then an application for surrender of the permit can be made.

5.0 MONITORING

5.1 Gas Monitoring

5.1.1 Since only non-biodegradable, non-hazardous materials consisting of construction, demolition and excavation wastes will be deposited at the site, the potential to produce landfill gas will be negligible. Consequently, it is not proposed to undertake in-waste gas monitoring during the active period of infilling of the site. Waste acceptance procedures will be used to ensure that only non-degradable wastes are deposited at the site.

5.1.2 However, in order to determine background gas concentrations to support the eventual surrender of the Environmental Permit, ground gas monitoring around the periphery of Croft Quarry has been undertaken since November 2018.

5.1.3 Background gas monitoring was undertaken in six monitoring boreholes; BH01, BH02A, BH02B, BH03A, BH03B, BH03C, BH04A and BH04B, and recorded methane, carbon dioxide and oxygen concentrations, barometric and relative pressures and internal flow rates. The location of each borehole is presented in **Drawing No.: AI1009/14/05**.

5.1.4 Full datasets and time-series charts for each determinand are provided in **Appendix ESSD9**. In addition to this, **Table ESSD17** has been prepared and displays the statistically analysed background concentrations for each determinand across both individual monitoring boreholes and within specific lithologies.

5.1.5 Background gas monitoring demonstrates that methane is not regularly detected around the periphery of the site, with a limited number of 0.1% v/v detections in each borehole throughout the monitoring period.

5.1.6 Carbon dioxide was continuously detected across the majority of the monitoring boreholes around the edge of Croft Quarry with recorded concentrations decreasing between February 2019 and June 2019. The highest concentration of 1.8%v/v was recorded in BH02/A, which is located approximately 65m to the southwestern edge of the quarry void and monitors the underlying Mercia Mudstone Group. The mean concentration at BH02/A during the monitoring period was 0.4%v/v. Whilst some variation in mean carbon dioxide concentrations is observed between the monitoring boreholes these concentrations fall within a narrow range (between 0.1%v/v and 0.7%v/v). The consistent mean concentrations around the periphery of Croft Quarry suggest that the concentrations recorded are representative of the baseline ground gas conditions.

5.1.7 Similarly, oxygen was continuously monitored around the periphery of Croft Quarry. However, it was identified that unlike the previously discussed carbon dioxide concentrations, no decreasing trend was observed with concentrations remaining largely stable throughout the monitoring period. This stability in concentrations is reflected in the similarity between recorded maximum and mean concentrations with all boreholes recording a maximum oxygen concentration of 22.2%v/v.

5.1.8 It was also noted that both recorded relative pressures and internal flow rates show broad consistency across all monitoring points, with monitoring boreholes indicating average relative pressure values of between -1mBar to 1.5mBar and average internal flow rates of between -2.3l/h and 0.4l/h.

5.1.9 As previously indicated complete datasets and time-series plots for each of the monitoring parameters are presented in **Appendix ESSD9**. Furthermore, in order to identify whether there were any diagnostic gas characteristics between the Diorite and Mercia Mudstone lithologies, boreholes monitoring was collated depending on which lithology they were monitoring. The collated datasets were then statistically analysed, and each parameter was compared. The results of this collation and statistical analysis are presented in **Table ESSD15** and indicate that all parameters are consistent across all lithologies and that there are no lithology specific trends.

Table ESSD15: Baseline Ground Gas Quality Summary (statistical outliers removed) between November 2018 and July 2021

Statistic	Methane (%v/v)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Barometric Pressure (mBar)	Relative Pressure (mBar)	Internal Flow (l/h)
BH01						
Min	<0.1	<0.1	12.3	980	-1.83	-1.6
Mean	<0.1	0.3	18.7	1003	0.15	-0.4
Max	0.1	1.2	21.9	1021	2.01	0.2
Stdev	0.04	0.4	2.9	10	1.22	0.5
Count	22	22	22	22	22	21
BH02/A						
Min	<0.1	<0.1	13	982	-2.54	-2.6
Mean	<0.1	0.4	19.1	1005	0.21	-1.0
Max	0.1	1.8	21.9	1024	2.47	2
Stdev	0.04	0.5	2.8	11	1.42	1.2
Count	22	22	21	22	22	21
BH02/B						
Min	<0.1	<0.1	8.3	982	-1.2	-1.4
Mean	<0.1	0.25	15.9	1005	0.20	-0.2
Max	0.1	0.7	21.9	1024	1.74	0.5
Stdev	0.04	0.3	5.2	11	0.89	0.6
Count	22	22	21	22	21	21
BH03/A						
Min	<0.1	<0.1	19.9	981	-1.59	-6.1
Mean	<0.1	0.1	21.1	1005	0.34	-2.3
Max	0.1	0.4	22	1024	3.56	0.1
Stdev	0.04	0.1	0.5	11	1.34	2.0
Count	22	22	21	22	22	21
BH03/B						
Min	<0.1	<0.1	13.4	981	-2.25	-1.8
Mean	<0.1	0.2	18.9	1005	0.70	-0.4
Max	0.1	0.5	21.8	1024	3.17	1.3
Stdev	0.04	0.2	2.7	11	1.44	1
Count	22	22	21	22	22	21
BH03/C						
Min	<0.1	<0.1	6.5	981	-1.17	-1.8
Mean	<0.1	0.2	16.2	1005	0.26	-0.3
Max	0.1	0.5	21.8	1024	3.73	0.4
Stdev	0.05	0.2	5.3	11	1.22	0.7
Count	22	22	22	22	22	21

Statistic	Methane (%v/v)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Barometric Pressure (mBar)	Relative Pressure (mBar)	Internal Flow (l/h)
BH04/A						
Min	<0.1	0.6	1	985	-1.54	-1.9
Mean	<0.1	0.7	2.1	1006	1.44	0.4
Max	0.1	0.9	5.8	1023	5.65	5
Stdev	0.04	0.1	11	10	2.16	1.8
Count	22	22	22	22	18	18
BH04/B						
Min	<0.1	<0.1	8.3	985	-1.76	-2.4
Mean	<0.1	0.2	20	1006	-0.16	-0.4
Max	0.1	0.7	22.2	1023	1.61	0.6
Stdev	0.04	0.2	2.9	10	1.02	0.7
Count	22	22	22	22	22	21
Diorite (BH01, BH02/B, BH03/c and BH04/B)						
Min	<0.1	<0.1	6.5	980	-1.83	-2.4
Mean	<0.1	0.2	17.6	1005	0.11	-0.3
Max	0.1	1.2	22.2	1024	3.73	0.6
Stdev	0.04	0.3	4.5	11	1.09	0.6
Count	88	88	87	88	87	84
Mercia Mudstone (BH02/A, BH03/B and BH04/A)						
Min	<0.1	<0.1	1	981	-2.54	-2.4
Mean	<0.1	0.5	13.2	1005	0.74	-0.3
Max	0.1	1.8	21.9	1024	5.65	5
Stdev	0.04	0.4	8.4	11	1.72	1.4
Count	66	62	64	66	62	59

5.1.10 As with the groundwater quality data presented in **Table ESSD14**, statistical analysis of the background peripheral gas concentrations was completed utilising the statistical assessment/outlier screening methodology presented in Environment Agency Research and Development document "Techniques for the Interpretation of Landfill Monitoring Data Guidance Notes, Report No. P1-471".

5.1.11 It is important to note that only inert wastes will be deposited at the site, therefore the potential for deposited wastes to produce landfill gas will be negligible. Consequently, it is not proposed to undertake in-waste gas monitoring during the active period of infilling of the site.

5.1.12 Full details of the perimeter gas monitoring to be carried out is presented in the Gas Risk Assessment (*Doc. Ref.: AI1009/15*) that supports this application.

5.1.13 Once final levels are achieved in each phase a series of in-waste monitoring boreholes will be installed within the wastes mass at a density of 1 per hectare where waste deposits exceed depths of 4m. These will be monitored quarterly for a period of 2 years post-closure to support the subsequent surrender of the permit. The proposed positions and design of these boreholes are presented in **Drawing Nos.: AI1009/14/05** and **AI1009/14/12** respectively.

5.2 Groundwater Monitoring

5.2.1 Groundwater monitoring will be carried out during the active tipping phase of quarry restoration. Due to the impermeable nature of the diorite intrusion and the vertical separation of the superficial deposits, groundwater monitoring will

only be undertaken from boreholes installed within the Mercia Mudstone Group. Full details of groundwater monitoring schedules are present in the Hydrogeological Risk Assessment that support the application (Doc. Ref.: AI1009/08).

5.3 Surface Water Monitoring

5.3.1 As previously mentioned, all surface water collected from the Croft Quarry void and infill area will be transferred to a storage tank and then lagoons where it will either be discharged into the River Soar via a consented discharge (Ref.: T/50/08259/T) or utilised for on-site activities prior to treatment in a lagoon system and subsequent discharge into the River Soar through a consented discharge (Ref.: T/50/45029/T).

5.3.2 All surface water run-off from the physical treatment facility will be captured by a sealed drainage system. All run-off from ancillary areas will be collected into either engineered drainage systems or overland into the River Soar and/or Thurlaston Brook.

5.3.3 Consequently, it is proposed that surface water monitoring is required at the discharge points associated with the discharge consents held by Aggregate Industries UK Limited.

5.3.4 Further details are presented in the Hydrogeological Risk Assessment that supports the application (*Doc. Ref.: AI1009/08*).

6.0 SITE CONDITION REPORT

6.1 Scope & Objectives

6.1.1 The Site Condition Report assess the baseline environment of the operational areas of Croft Quarry Area that will not receive permanent deposits of waste.

6.1.2 The Site Condition Report has been compiled in accordance with the Environment Agency's ESSD guidance (published 30th January 2020), and H5 Guidance. Information has been gathered from a number of sources including existing site investigation reports, desk study analysis and observations made by Sirius.

6.1.3 The purpose of this Site Condition Report is to provide a factual statement of the condition of the site at the time of variation of the Environmental Permit and the extension of the Environmental Permit Boundary. The Site Condition Report must describe the nature and distribution of potentially polluting substances in the ground and groundwater at the site prior to the commencement of operations under the Environmental Permit, and those handled during the course of the permitted operations. The potentially polluting substances of interest are those which are to be handled at the site under the Permit, and include raw materials, waste materials and by-products that are generated by the process.

6.1.4 The development comprises currently of a physical treatment facility as well as the proposed restoration of Croft Quarry via infilling using selected non-biodegradable, non-hazardous waste under a waste recovery operation.

6.1.5 This section of the ESSD focuses on the condition of the areas of the site which will not be subject to the permanent deposit of wastes. For Croft Quarry, this covers all the land outside the boundary of the indicated infill area which will be utilised for ancillary support buildings, internal access roads, the area on which the physical treatment facility is located, infrastructure associated with mineral processing and concrete production activities and the land around the perimeter of the quarry void. The waste that will be disposed at the site will be non-biodegradable, non-hazardous in nature and as such it should present little chance of pollution or contamination.

6.2 Condition of Land at the Permit issue

Sources of Information

6.2.1 The base information this report has been determined from a review of available published information, including:

- Landmark Envirocheck Report (**Appendix ESSD1**);
- BGS 1:50,000 scale geology maps;
- Environment Agency web-based data;
- Data.gov.uk website; and
- DEFRA's MAGIC website.

Development History

6.2.2 A full description of the development history of the site and surrounding areas is provided in Section 2.0.

6.2.3 In summary, the development history of the access road, reception area and most of the current quarry void consisted of open agricultural land at the time of

the earliest map record dated 1886. Since then, these areas have supported the wider quarry operations, including infrastructure such has overhead conveyors, access roads, weighbridges, storage facilities and landfilling activities. The rail link connecting Croft Quarry to the South Leicester railway line has been present since 1886, however since then it has been updated from a tramway to a modern railway link. To the south of the quarry void are the site offices and the main mineral processing facility. Mineral extraction is currently ongoing in the south-eastern area of the site.

6.2.4 Beyond the boundary of Croft Quarry, the development history has been limited to mainly agricultural and residential activities, with the expansion of both Huncote and Croft villages in the late 20th Century. To the north of Croft Quarry, the M69 motorway was constructed between 1974 and 1980-1982.

Geology

6.2.5 A detailed description of the regional and local geology and hydrogeology is presented in Section 3.2. The site is underlain by the Mercia Mudstone Group; comprising mudstone and siltstone along with thin beds of gypsum/anhydrite and occasionally sandstone, and the South Leicestershire Diorite Complex. The quarry complex at Croft has been excavated through the Mercia Mudstone Group into the South Leicestershire Diorite Complex.

6.2.6 The base of the Mercia Mudstone Group sediments in the vicinity of Croft Quarry dip gently away from the quarry void.

6.2.7 Where present, superficial deposits at the site comprise primarily of the diamicton Oadby Member and River Terrace sand and gravels. A full description of the superficial geology is included within Section 3.2.

Hydrology

6.2.8 The hydrology of the site has been discussed in Section 3.3.

6.2.9 The application site is located in the catchment of the River Soar River which rises approximately 9.5km southwest of the quarry from where it flows generally east then north before flowing east passing approximately 150m to the south of the quarry footprint. The River Soar has a confluence with Thurlaston Brook and Broughton Astley Brook along the south-eastern boundary of the application site. Subsequently the River Soar continues to flow eastwards until the confluence with the River Sence; approximately 3.7km to the east of the quarry.

6.2.10 The site is located in an area at risk from groundwater and surface water flooding. This risk ranges from very low to high and is primarily attributed to the accumulation of rainwater within the quarry void. Additionally, the eastern boundary of the application site with entire site is within Flood Zone 2 and Flood Zone 3 of the Thurlaston Brook watercourse. Furthermore, the application site's southern boundary falls within Flood Zone 2 and Flood Zone 3 of the River Soar. Due to the lateral distance between these flood risk zones and the proposed quarry void, alongside the absence of historical (including geological) indicators of flooding the site has been deemed as not at risk of fluvial or coastal flooding.

6.2.11 There are several areas of open water associated with current quarrying operations at the site. Surface water runoff is collected in engineered drainage systems which drain channel the runoff into engineered settlement lagoons located to the southeast of Croft Quarry. Water collected in the aforementioned settlement lagoons is utilised in the mineral processing activities before being discharged via licensed and monitored discharges. There is a total of six active

surface water discharge consents within 1km of Croft Quarry, details of which are presented in **Table ESSD10** and one active groundwater discharge consent within 1km of Croft Quarry, summary details of which are summarised in **Table ESSD13.**

6.2.12 There are currently nine licensed abstractions within 2km of the site as detailed in **Table ESSD11** and **Table ESSD12**. Aggregate Industries hold an abstraction license to abstract water from the River Soar, a copy of this Abstraction License (Serial No. 03/28/50/97) is presented in **Appendix ESSD4**.

Hydrogeology

6.2.13 The detailed description of the regional and local hydrogeology is presented in Section 3.4. To summarise, Mercia Mudstone Group is classified as a Secondary B Aquifer and the overlying superficial deposits are classified as either a Secondary 'A' Aquifer or as a Secondary (Undifferentiated) Aquifer.

6.2.14 There is currently a total of seven licensed groundwater abstraction points within 2km of Croft Quarry, details of which are presented in **Appendix ESSD1** and summarised in **Table ESSD12**.

Natural Hazards

6.2.15 The Landmark Information Group Service Report covering Croft Quarry was used to identify the potential natural hazards at the site. A summary of the ratings associated with each potential hazard on site and to distance of 250m from the site boundary is provided in **Table ESSD16**.

Table ESSD16: Natural Hazard Rating Summary within 250m of the site

Hazard Type	Hazard Rating
Instability due to Coal Mining	No Hazard
Shrink Swell	No Hazard to Very Low
Landslides	No Hazard to Moderate
Ground Dissolution Stability	No Hazard
Compressible Ground	No Hazard
Collapsible Ground	Very low
Running Sand	No Hazard
Radon Potential	The property is in a lower probability radon area, as less than 1% of homes are above the action level.

Mineral Sites and Hazardous Facilities

6.2.16 There is a total of 2 mineral sites recorded by the BGS within 1km of the site. Both of these records fall within the application site boundary with one record relating to Croft Quarry and the other relating to Huncote Quarry; which has since been incorporated into Croft Quarry.

6.2.17 There are no registered facilities handling hazardous substances located within 1km of the site.

Environmental Regulatory Authorisations

6.2.18 There are a total of eight active Local Authority Pollution Prevention and Controls authorisations within 500m of Croft Quarry, with seven either held by Aggregate Industries or relating to mineral processing/coating activities at Croft Quarry. Details are presented in **Appendix ESSD1**, with summary details presented in **Table ESSD17**. Additionally, there are three Local Authority Pollution Prevention and Controls authorisations which are no longer active.

Table ESSD17: Local Authority Pollution Prevention and Controls authorisation within 500m of site

Location	Details
Huncote Road, Croft, Leicester, Leicestershire, LE9 3GT Distance: 0m SE NGR: 451179, 296145	Name: Aggregate industries Ltd Permit Reference: A/89/3/15 Dated: 7th May 2002 Description: PG3/15 Mineral drying and road stone coating processes Status: Authorised
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 3GS Distance: 0m SE NGR:451601, 296185	Name: Aggregate Industries UK Ltd (Masterblock) Permit Reference: MAS/001/11/ARF Dated: 15th November 2000 Description: PG3/1 Blending, packing, loading and use of bulk cement Status: Permitted
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 3GS Distance: 0m SE NGR:451601, 296185	Name: Aggregate Industries Permit Reference: QUA/001/11/ARF Dated: 6th August 1997 Description: PG3/8 Quarry processes including roadstone plants and the size reduction of bricks, tiles and concrete Status: Permitted
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 3GS Distance: 0m SE NGR:451601, 296185	Name: Aggregate Industries Permit Reference: ASP/001/08/ARH Dated: 19th April 1993 Description: PG3/15 Mineral drying and road stone coating processes Status: Permitted
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 3GS Distance: 0m SE NGR:451601, 296185	Name: Aggregate Industries (Bardon Concrete) Permit Reference: BAR/001/11/ARF Dated: 31st March 1993 Description: PG3/1 Blending, packing, loading and use of bulk cement Status: Permitted
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 3GS Distance: 0m SE NGR:451601, 296185	Name: Aggregate Industries (Charcon Specialist) Permit Reference: CHA/001/11/ARF Dated: 23rd March 1992 Description: PG3/1 Blending, packing, loading and use of bulk cement Status: Permitted
Croft Quarry, Marion's Way, Coventry Road, Leicester, Leicestershire, LE9 Distance: 0m SE NGR:451577, 296149	Name: Bardon Concrete Permit Reference: Not Given Dated: Not Supplied Description: PG3/1 Blending, packing, loading and use of bulk cement Status: Permitted
9 Main Street, Huncote, Leicester, Leicestershire, LE9 3AU Distance: 355m NE NGR: 451660, 297414	Name: Main Street Garage Permit Reference: MSG/001/10/JCR Dated: 22nd December 1998 Description: PG1/1 Waste oil burners, less than 0.4MW net rated thermal output Status: Permitted

6.2.19 There are also two records within 1km of the site relating to historical landfill sites, one relating to licensed waste management facilities, and one relating to Local Authority Recorded Landfill Sites. Details are presented **Appendix ESSD1** and summarised in **Table ESSD18**.

Table ESSD18: Summary of waste facilities within 1km of the reception area

Location	Details
Historical Landfill Sites	
Croft Landfill, Croft, Blaby, Leicestershire Distance: 0m E NGR: 451763, 296506	Licence Holder: ECC Quarries Limited Name: Croft Landfill, Croft, Blaby Provider Reference: EAHLD28348 First Input Date: 31st December 1937 Last Input Date: 30th April 1989 Specified Waste type: Deposited Waste included Industrial and Household Waste
Cheney End, Huncote, Leicestershire Distance: 365m NE NGR: 451603, 297462	Licence Holder: Not Supplied Name: Cheney End, Huncote Provider Reference: EAHLD22607 First Input Date: 31st December 1935 Last Input Date: 31st December 1965 Specified Waste type: Deposited Waste included Industrial, Commercial and Household Waste

Licensed Waste Management Facilities	
Croft Masterblock, Marion's Way, Coventry Road, Croft, Leicestershire, LE9 3GQ Distance: 0m SE NGR: 452072, 296107	Name: Croft Masterblock Licence Number: 402354 Licence Holder: Aggregate Industries U K Ltd Authority: Environment Agency- Midlands Region, East Area Site Category: Treatment of waste to produce soil <75,000 tpy Licence Status: Issued Issued: 29th June 2015
Local Authority Recorded Landfill Site	
Location Not Supplied Distance: 0m E NGR: 451770, 296505	Reference: 79 Authority: Leicestershire County Council Last reported status: Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied

Contemporary Trades

6.2.20 There are currently six active contemporary trade directory entries within 1km of the site as detailed in **Table ESSD19**, all other contemporary trade directory entries are either inactive or obsolete.

Table ESSD19: Summary of active contemporary trade directory entries within 1km of the site

Location	Details
Greystones, Huncote Road, Croft, Leicestershire, LE9 3GT Distance: 0m S NGR: 451031, 296023	Name: Aggregate Industries Ltd Classification: Concrete Products Status: Active Positional Accuracy: Automatically positioned to the address
Greystones, Huncote Road, Croft, Leicestershire, LE9 3GT Distance: 0m S NGR: 451031, 296023	Name: Aggregate Industries Ltd Classification: Sand, Gravel & Other Aggregates Status: Active Positional Accuracy: Automatically positioned to the address
Gemini House, Winston Avenue, Croft Leicester, LE9 3GQ Distance: 60m S NGR: 451540, 295778	Name: Croft Garage Leicester Ltd Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address
Winston Avenue, Croft Leicester, LE9 3GQ Distance: 60m S NGR: 451558, 295769	Name: Atacama Audio Classification: Hi-Fi Equipment Manufacturers & Distributors Status: Active Positional Accuracy: Automatically positioned to the address
Croft Quarry, Coventry Road, Leicester, Leicestershire, LE9 3GP Distance: 0m SE NGR:451860, 296007	Name: Aggregate Industries Classification: Asphalt & Macadam Suppliers Status: Active Positional Accuracy: Automatically positioned to the address
Winston Avenue, Croft Leicester, LE9 3GQ Distance: 60m S NGR: 451629, 295814	Name: Insitu Display Classification: Shop Fittings Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address

6.3 Permitted Activities

6.3.1 The area under the consideration of this SCR will serve as the primary access and reception (weighbridge) area and temporary storage area to the main quarry void/restoration area as well as a staging area for the existing physical treatment facility.

Potential Contaminants

6.3.2 As a result of the nature of the waste to be deposited within the void and treated at the existing physical treatment facility, there are not considered to be limited potential contaminants originating from the waste. The waste will comprise of soils and other similar non-biodegradable, non-hazardous materials.

6.3.3 The only potential polluting substances within the site are oils and fuels from plant, equipment and vehicles (primarily delivery vehicles). The access routes are surfaced with tarmac and concrete which will prevent the downward percolation of potentially polluting substances. It is highly unlikely that spills of this nature would pose a significant threat to the condition of the land.

6.4 Conclusions

6.4.1 The information presented within the preceding sections of this report establishes the baseline site conditions for the Croft Quarry facility, in terms of geology, surface water and groundwater conditions and their sensitivity.

6.4.2 The historic land use of the site, detailed in Section 2.2, does not identify any significant potentially contaminative land uses, other than the historic Croft and Cheney End Landfills.

6.4.3 Potential contaminants associated with such activities are fundamentally different to those associated with infilling operation and accordingly, it is considered that the baseline conditions with regard to proposed waste recovery development are well understood.

APPENDIX ESSD1
Landmark Envirocheck Report

Historical Mapping

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Sloping Masonry
Pylon
Pole
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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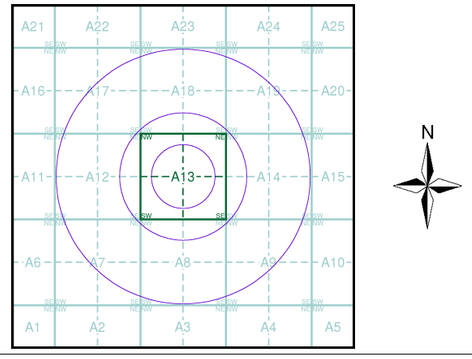
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:10,560	1886	3
Leicestershire	1:10,560	1904	4
Leicestershire	1:10,560	1919	5
Leicestershire	1:10,560	1938	6
Ordnance Survey Plan	1:10,000	1955	7
Ordnance Survey Plan	1:10,000	1967 - 1968	8
Ordnance Survey Plan	1:10,000	1973	9
Leicester	1:10,000	1974	10
Ordnance Survey Plan	1:10,000	1980 - 1982	11
Ordnance Survey Plan	1:10,000	1993	12
10K Raster Mapping	1:10,000	2000	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2016	15

Historical Map - Slice A



Order Details

Order Number: 109996096_1_1
Customer Ref: 65543
National Grid Reference: 451230, 296550
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 — Values for prominent elevations

186.0 — Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 — Velocity of the current, width of river bed, depth of river

Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Direction and velocity of current
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

SP59NW_Leicester

No.	Description
48	Factories (Concrete, Granite And Bricks)

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:10,560	1886	3
Leicestershire	1:10,560	1904	4
Leicestershire	1:10,560	1919	5
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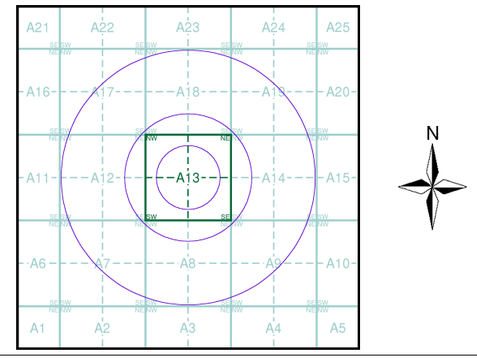
Russian Map - Slice A



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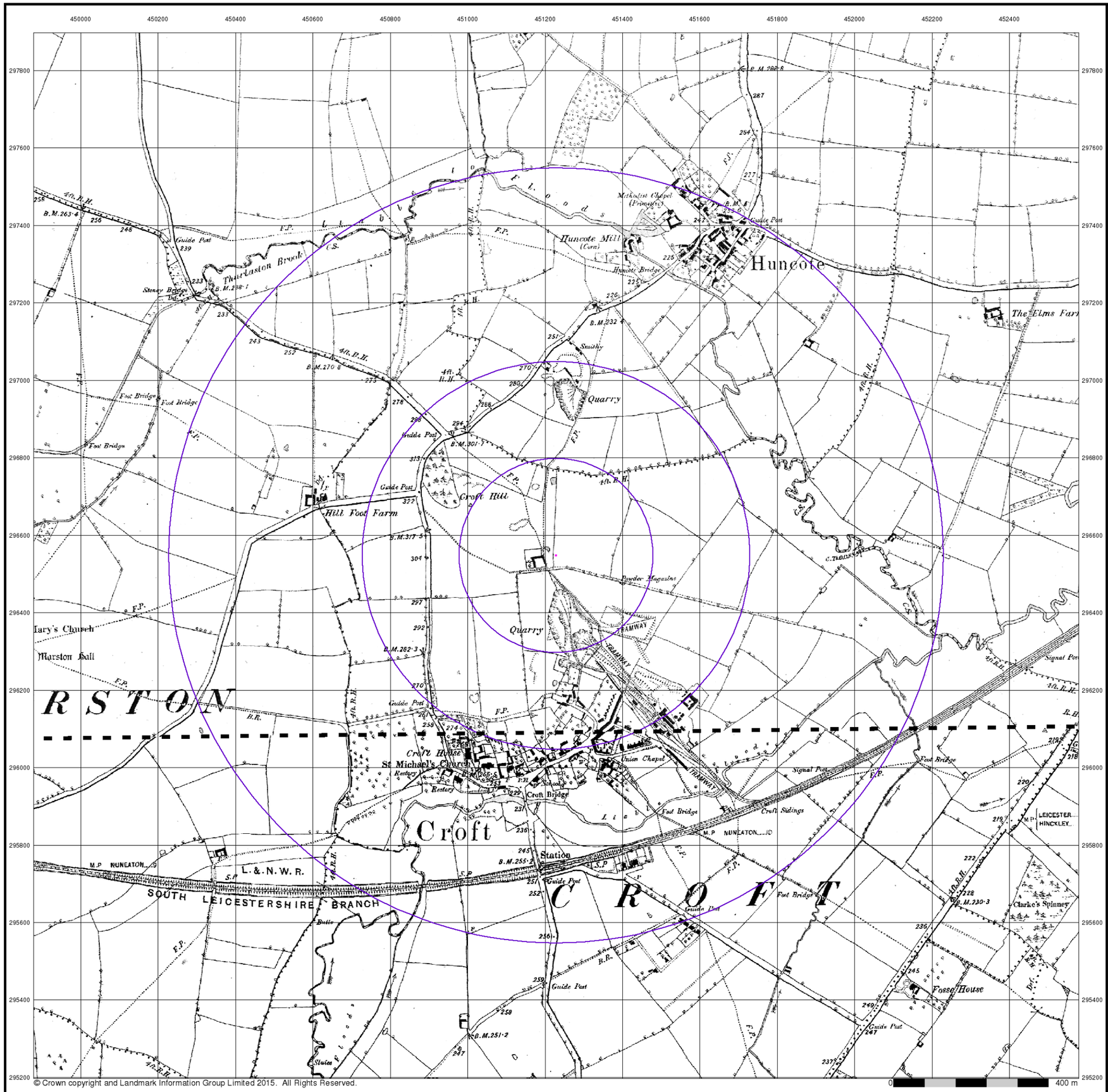

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Leicestershire

Published 1886

Source map scale - 1:10,560

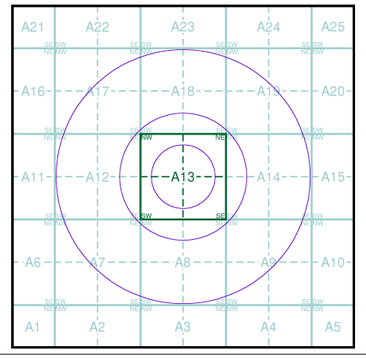
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

036SE
1886
1:10,560

043NE
1886
1:10,560

Historical Map - Slice A



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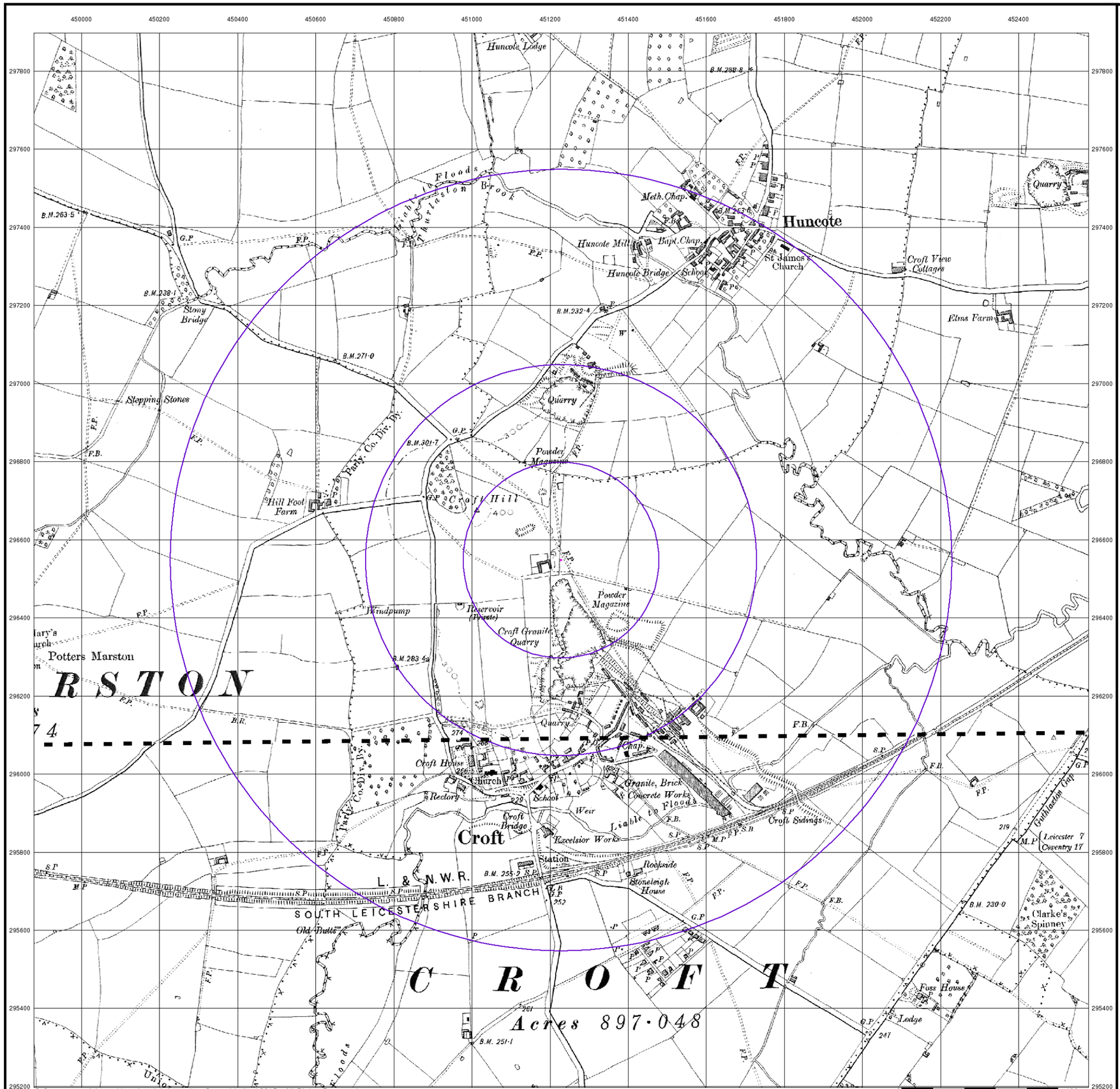

esi consulting — Applied Environmental Insight

Leicestershire

Published 1904

Source map scale - 1:10,560

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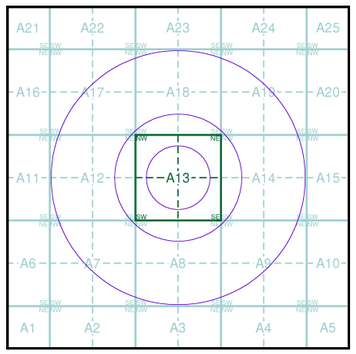
Map Name(s) and Date(s)

036SE
1904
1:10,560

043NE
1904
1:10,560

Historical Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

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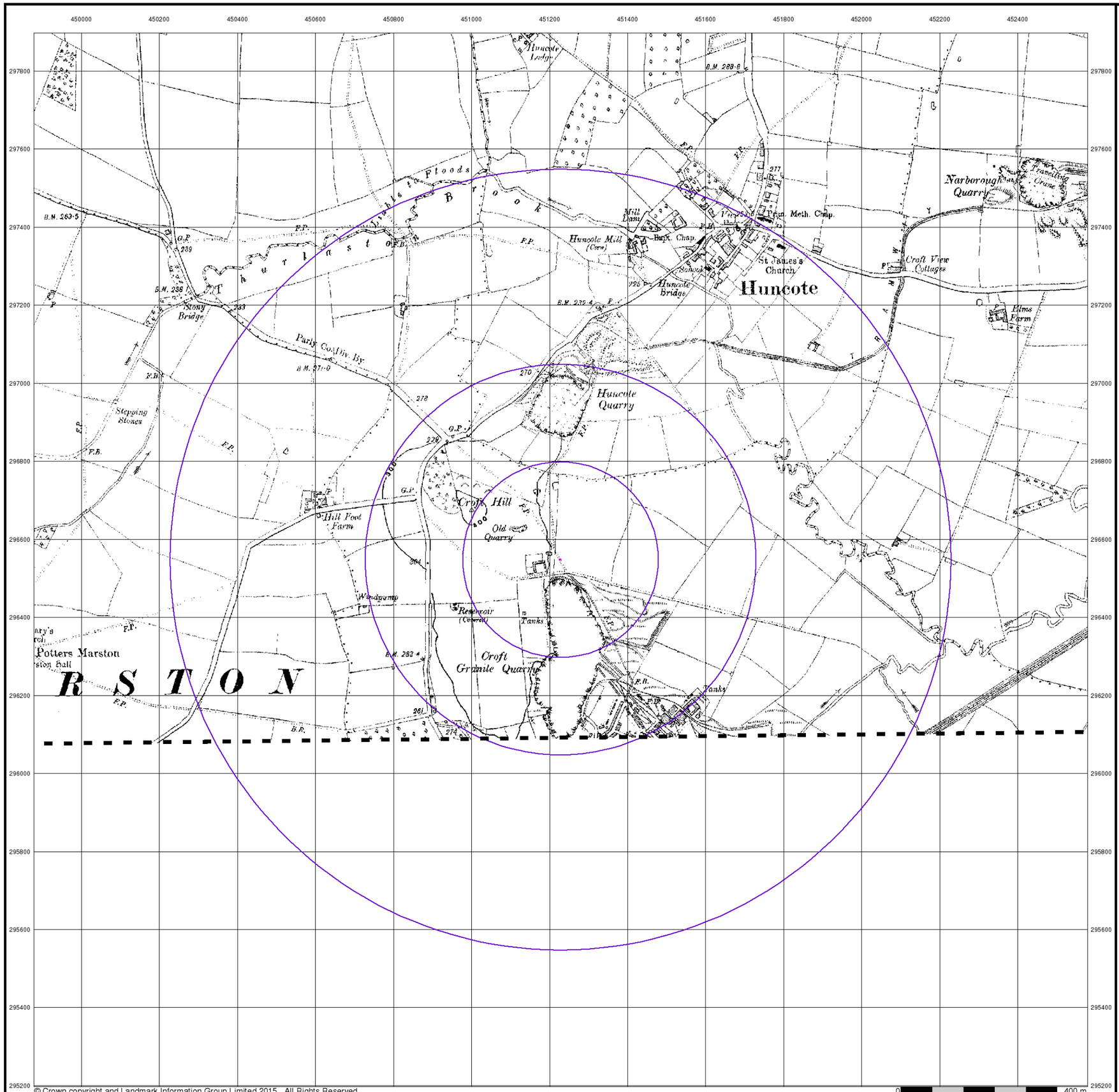
Web: www.envirocheck.co.uk



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Leicestershire

Published 1919

Source map scale - 1:10,560

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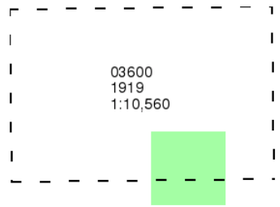
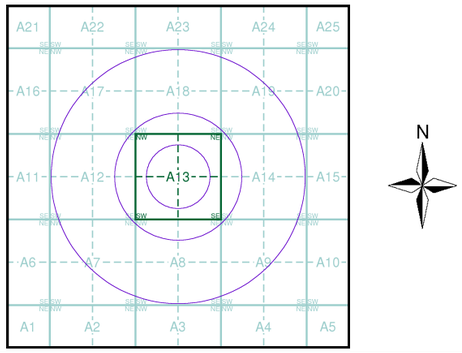
Map Name(s) and Date(s)



Historical Map - Slice A



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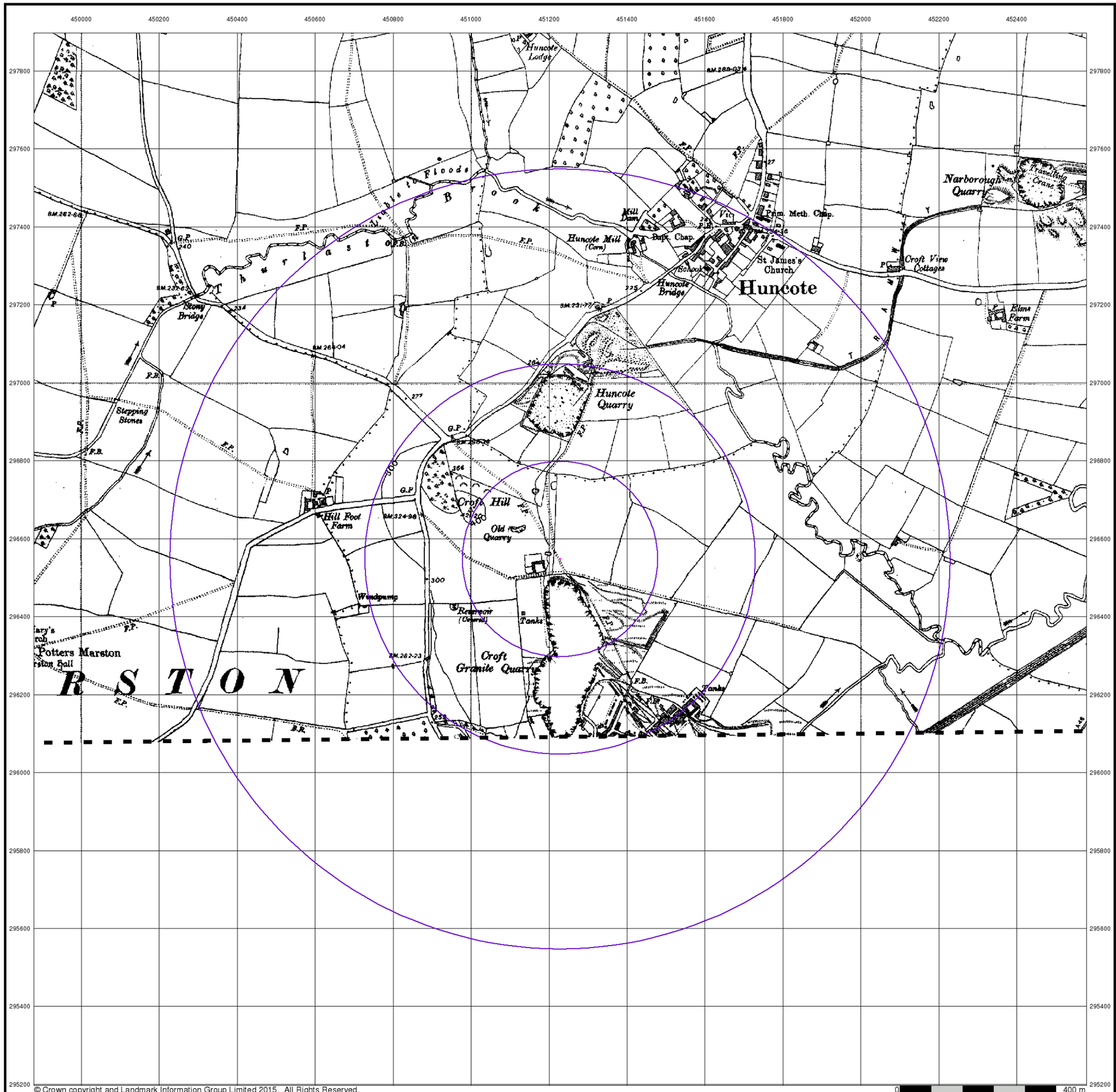

Applied Environmental Insight

Leicestershire

Published 1938

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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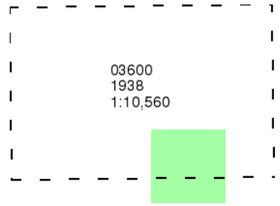
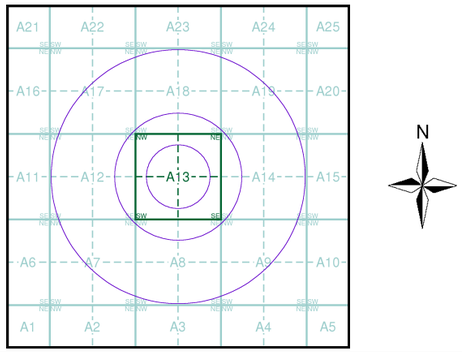


Historical Map - Slice A



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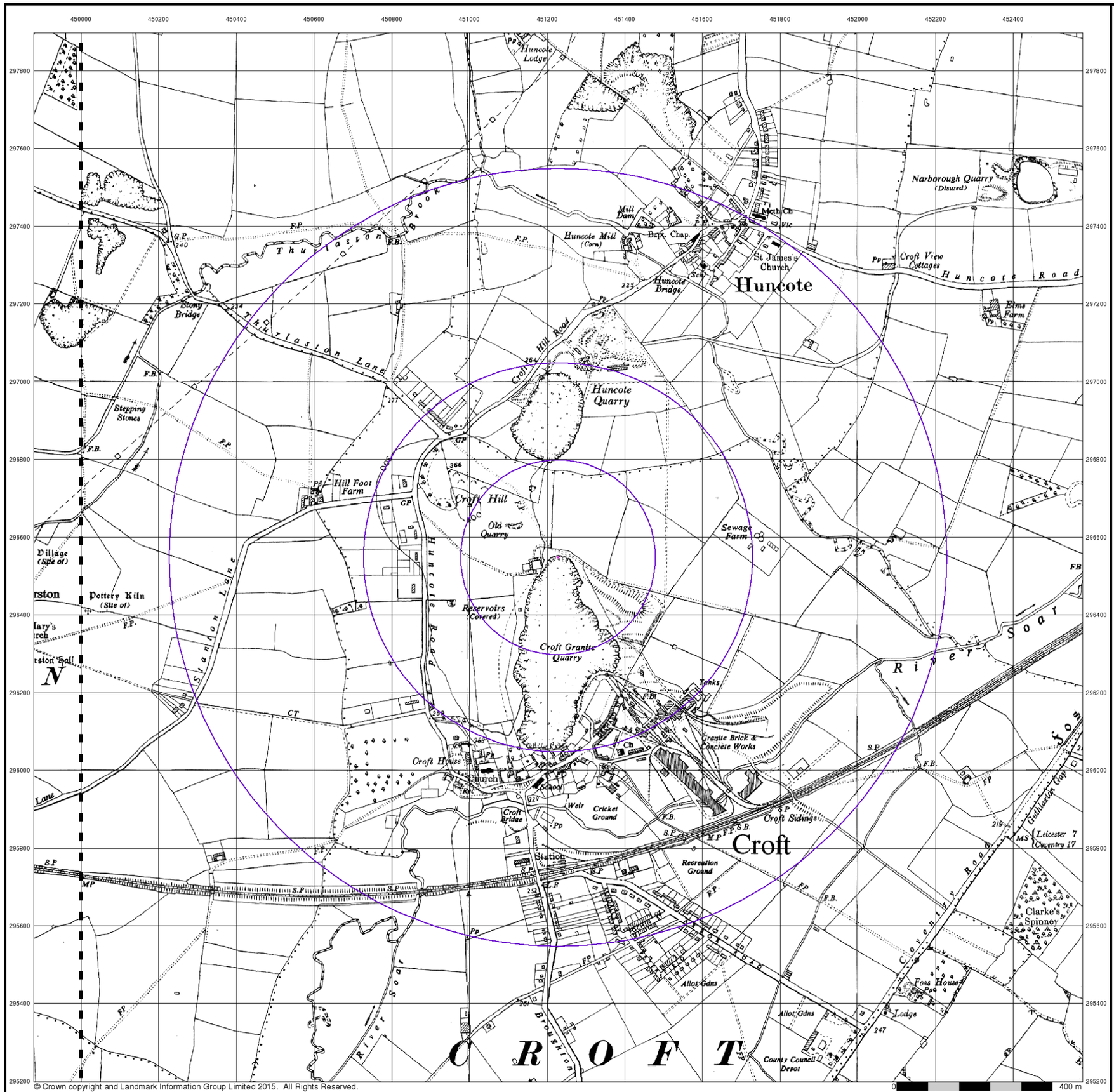

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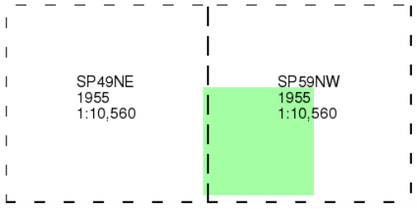
Ordnance Survey Plan

Published 1955

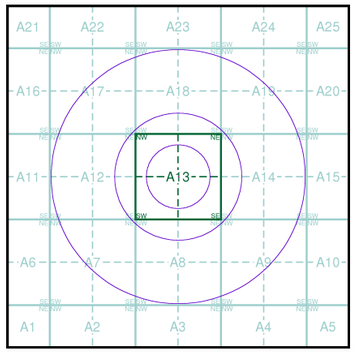
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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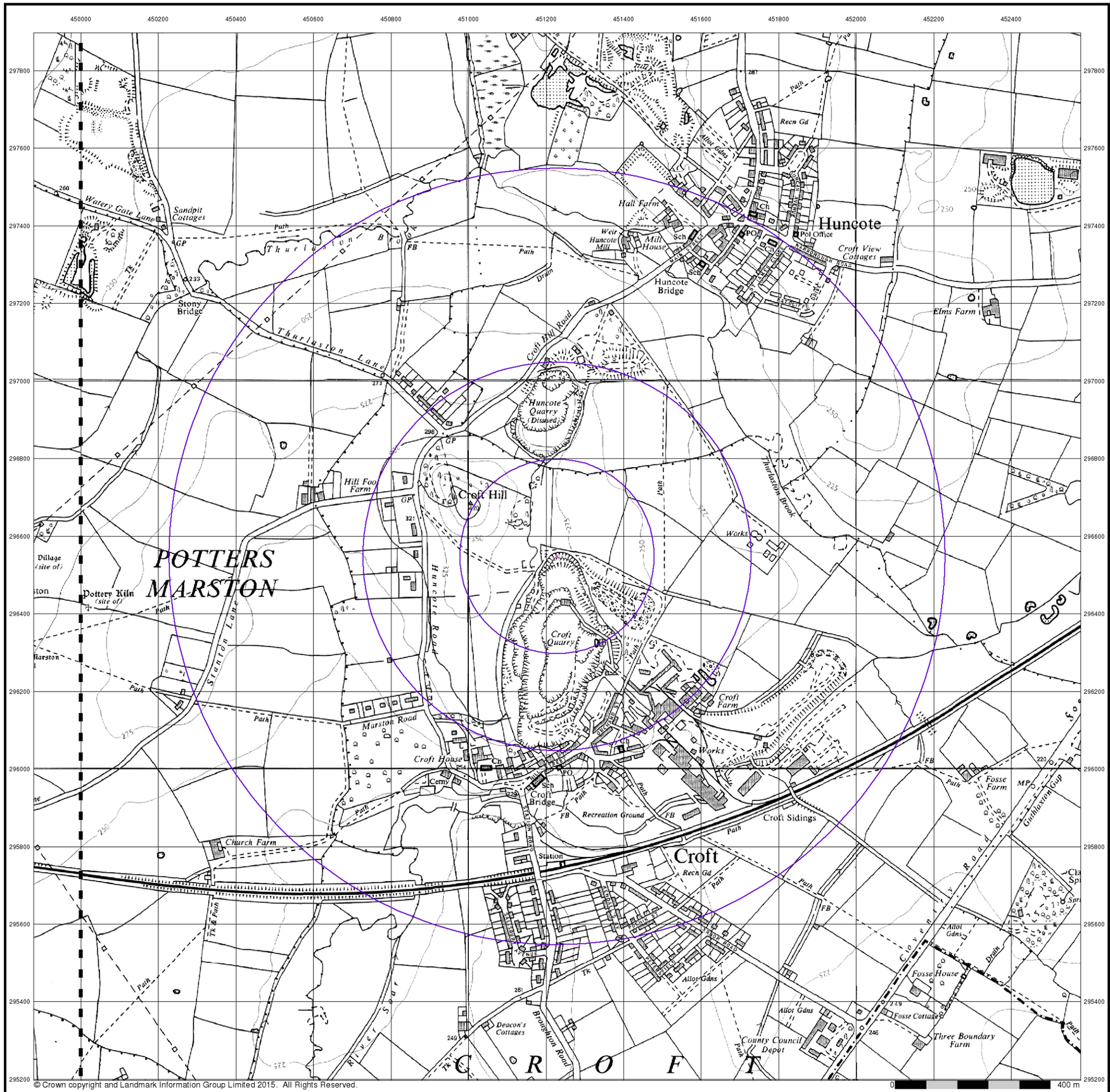

Applied Environmental Insight consulting

Ordnance Survey Plan

Published 1967 - 1968

Source map scale - 1:10,000

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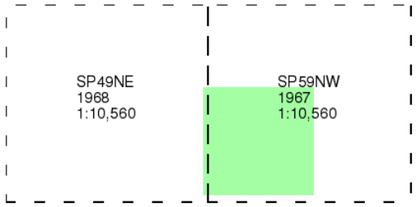
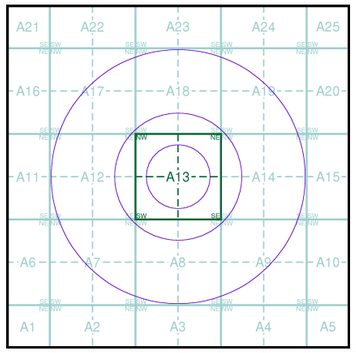
Map Name(s) and Date(s)



Historical Map - Slice A



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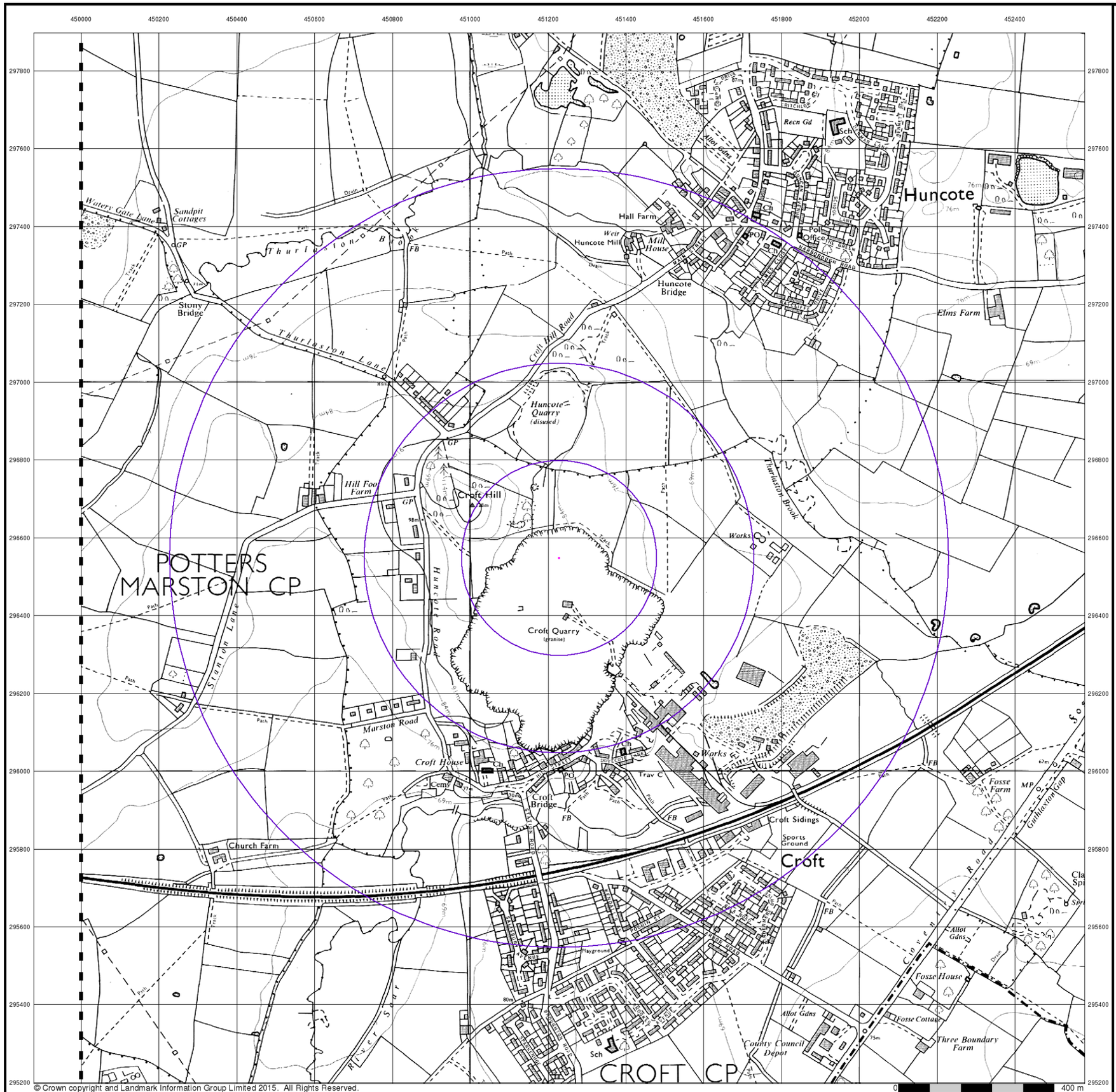

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Ordnance Survey Plan

Published 1973

Source map scale - 1:10,000

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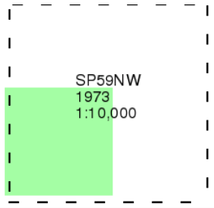
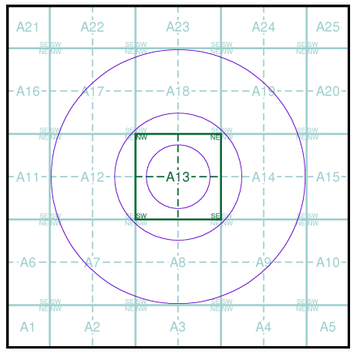


Historical Map - Slice A



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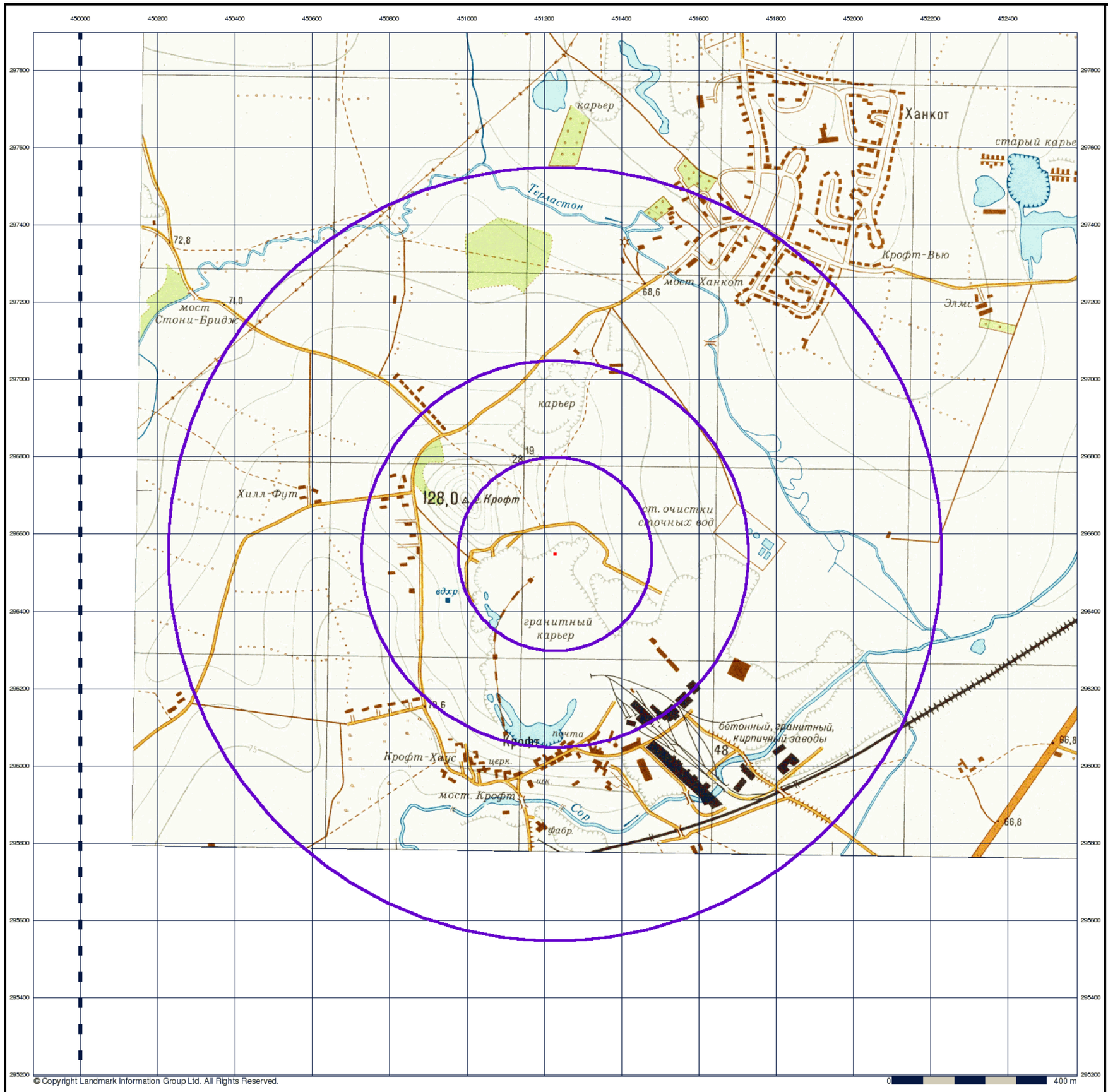

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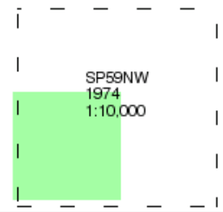
Leicester

Published 1974

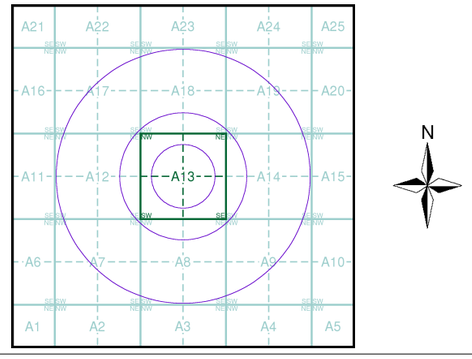
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

Order Number:	109996096_1_1
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Site Details

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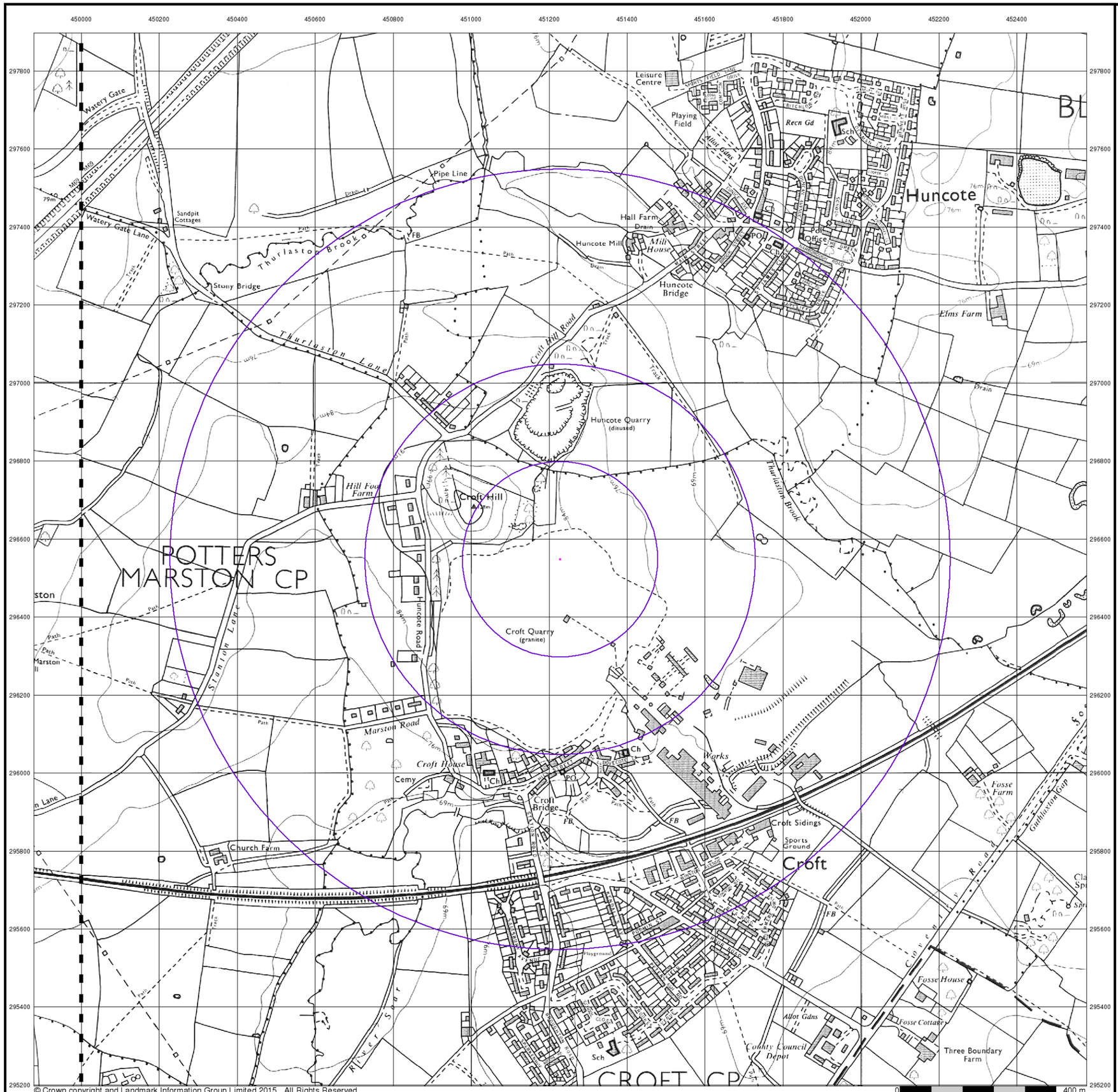

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Ordnance Survey Plan

Published 1980 - 1982

Source map scale - 1:10,000

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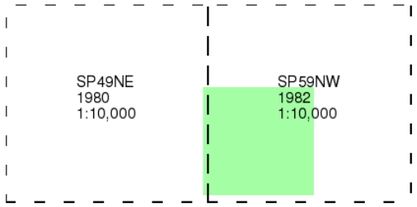
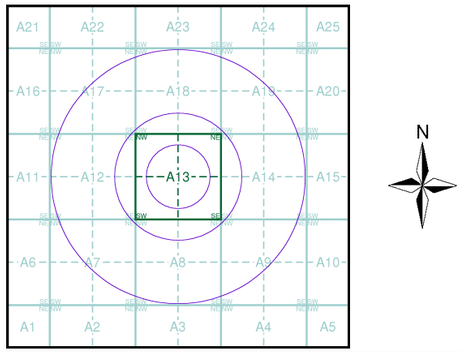


Historical Map - Slice A



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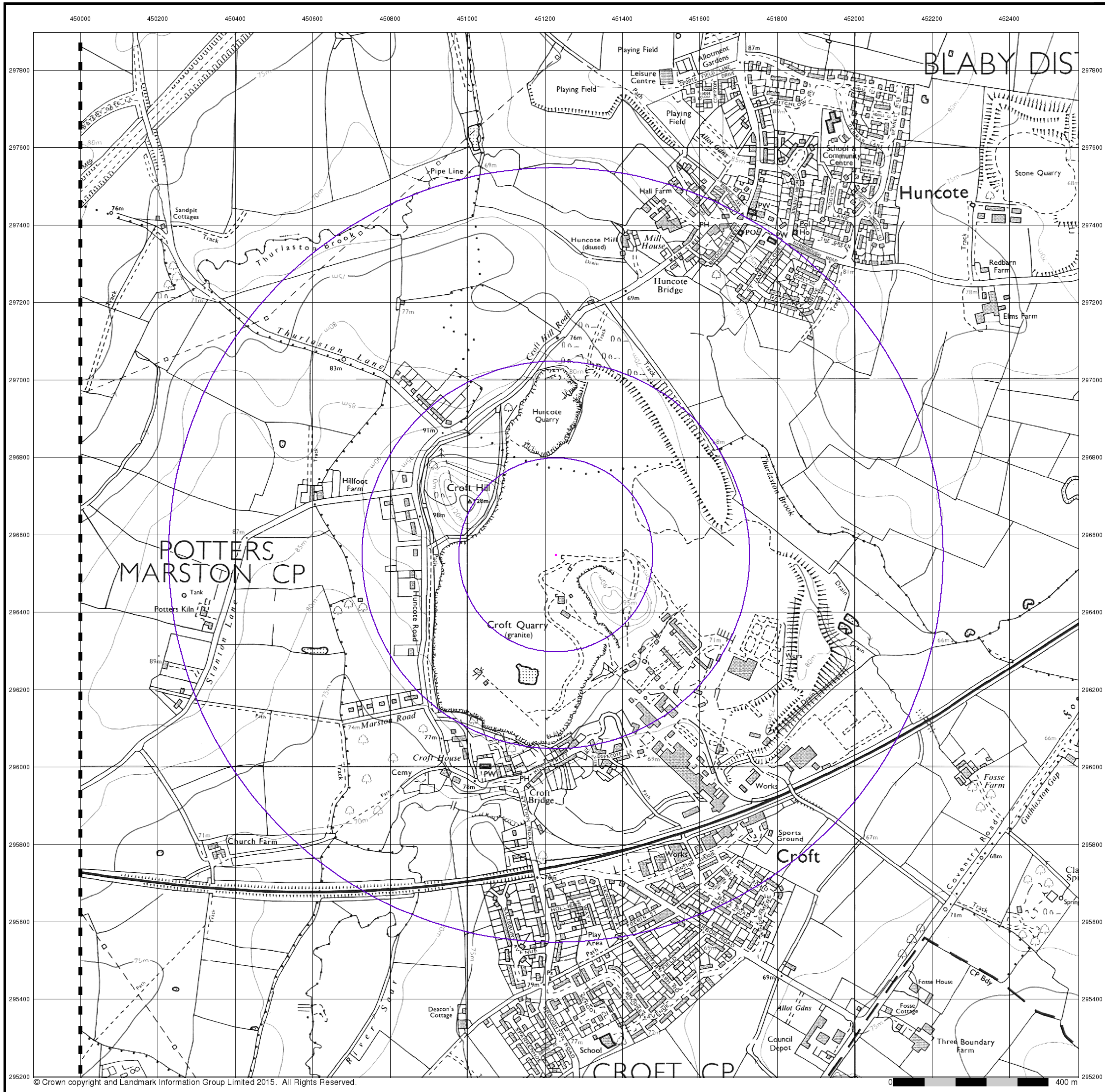

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consulting

Ordnance Survey Plan

Published 1993

Source map scale - 1:10,000

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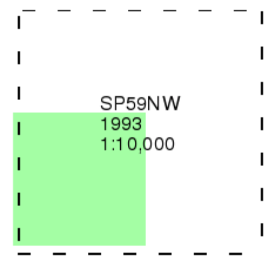
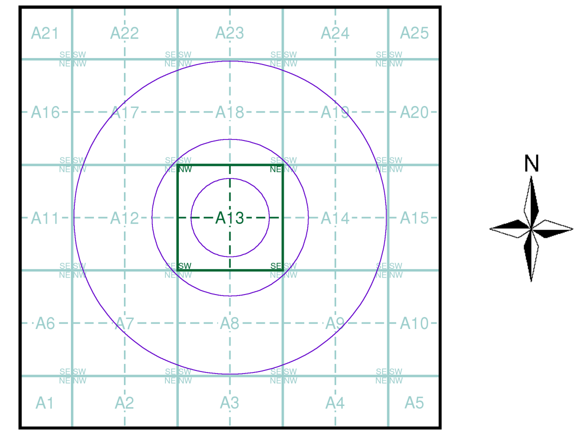


Historical Map - Slice A



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Order Number: 109996096_1_1
Customer Ref: 65543
National Grid Reference: 451230, 296550
Slice: A
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Site Details

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Landmark INFORMATION GROUP

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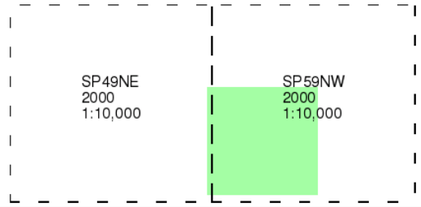
10k Raster Mapping

Published 2000

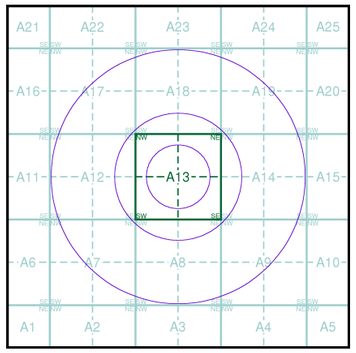
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



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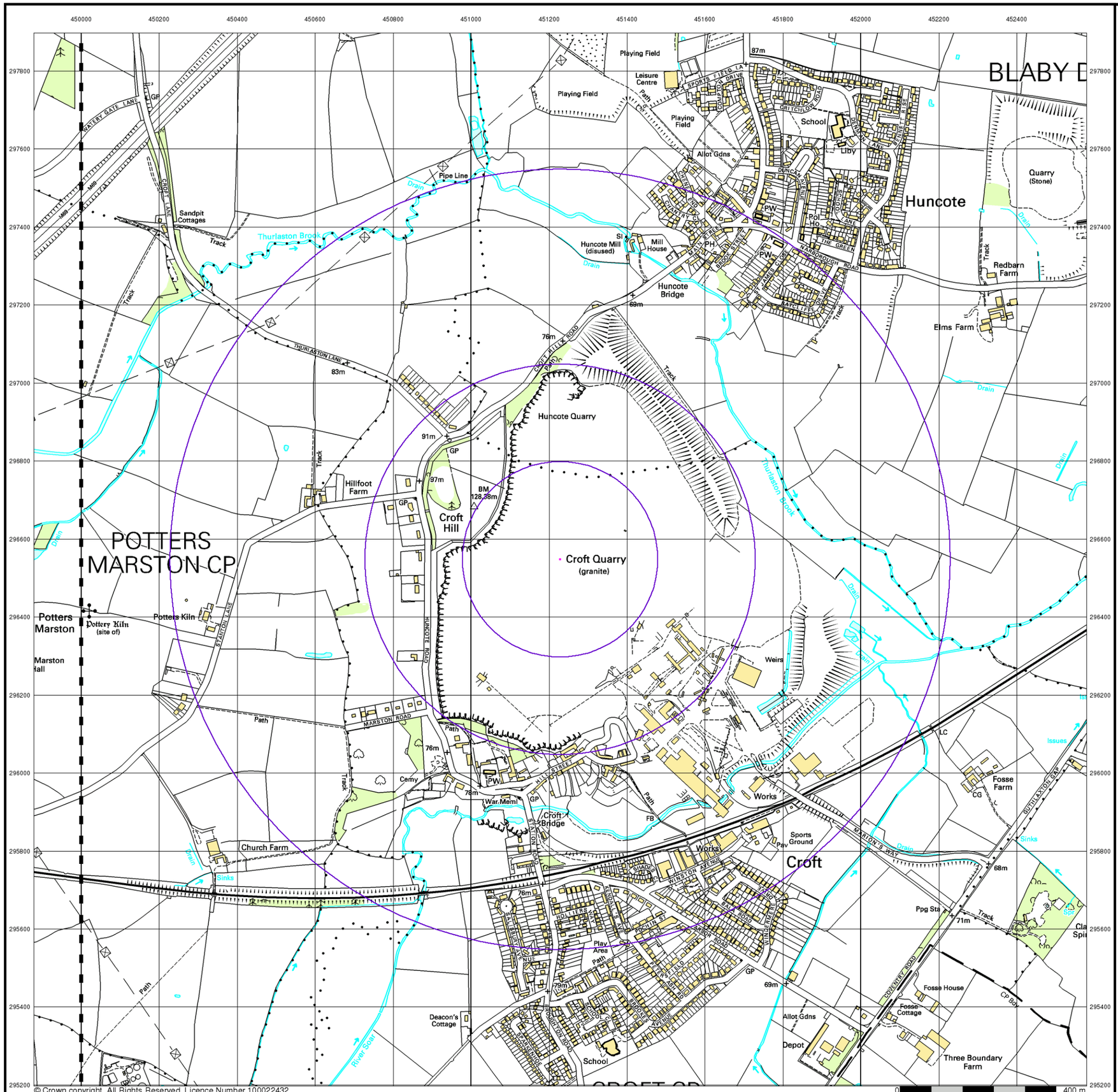

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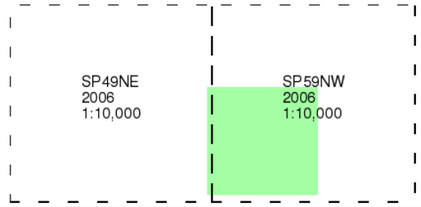
10k Raster Mapping

Published 2006

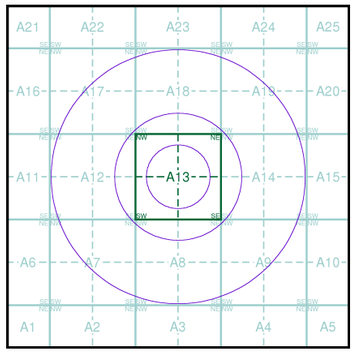
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



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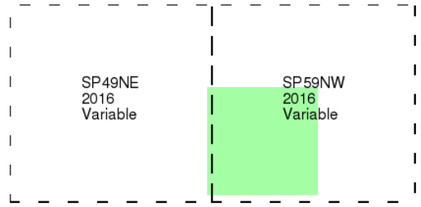
VectorMap Local

Published 2016

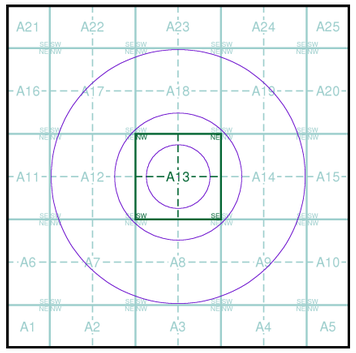
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

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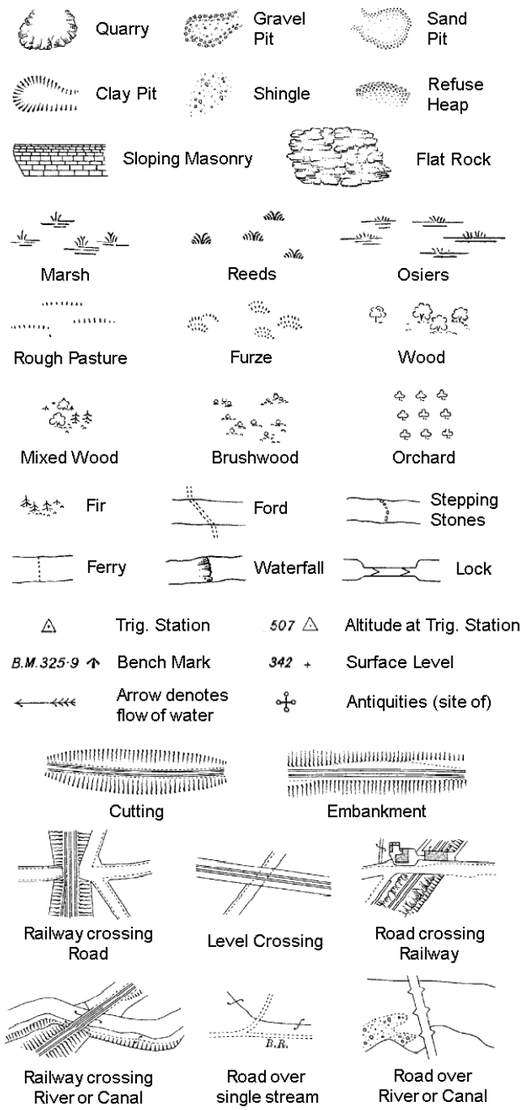
Historical Mapping Legends

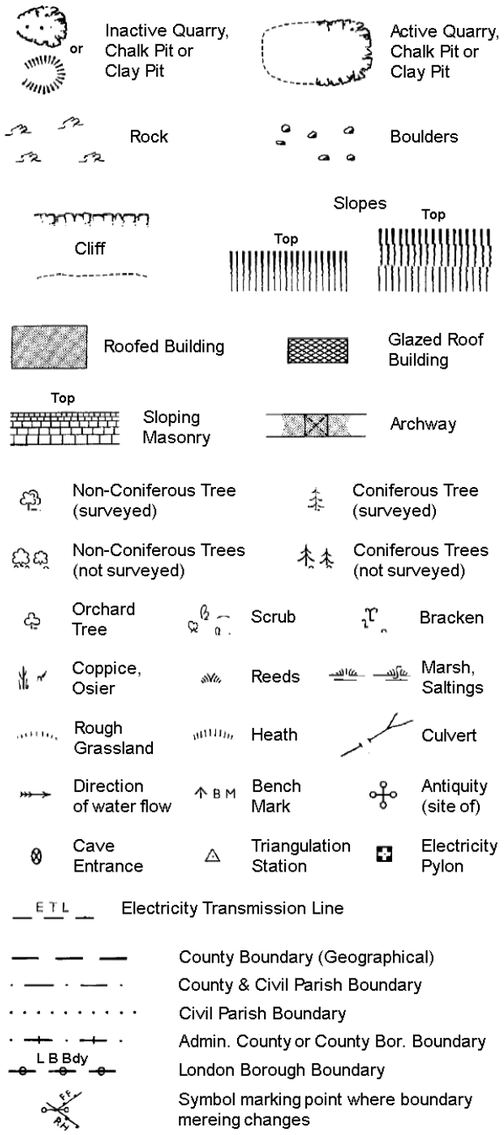
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
Co. Boro. Bdy.
County Burgh Boundary (Scotland)
Co. Burgh Bdy.

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

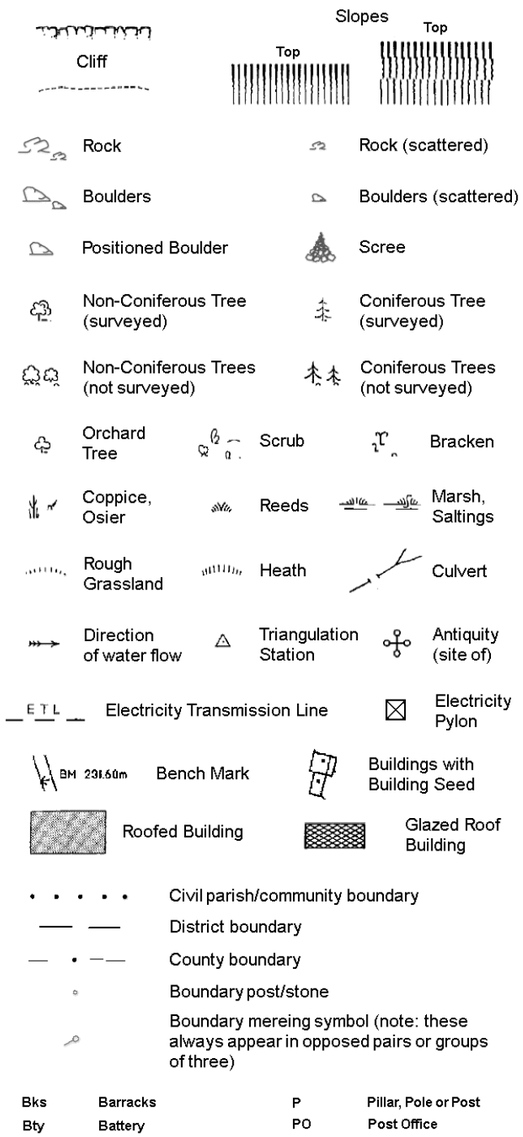
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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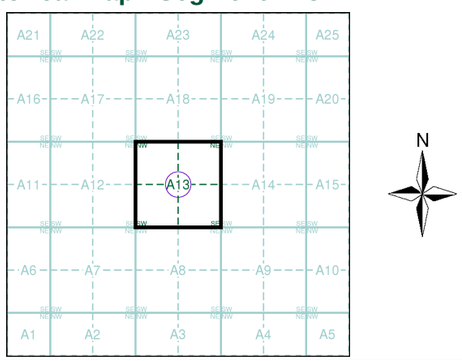
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:2,500	1888	2
Leicestershire	1:2,500	1903	3
Leicestershire	1:2,500	1916	4
Ordnance Survey Plan	1:2,500	1963	5
Additional SIMs	1:2,500	1963 - 1989	6
Supply of Unpublished Survey Information	1:2,500	1973	7
Large-Scale National Grid Data	1:2,500	1994	8
Large-Scale National Grid Data	1:2,500	1996	9
Large-Scale National Grid Data	1:2,500	1996	10
Historical Aerial Photography	1:2,500	1999	11

Historical Map - Segment A13



Order Details

Order Number:	109996096_1_1
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Slice:	A
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Search Buffer (m):	100

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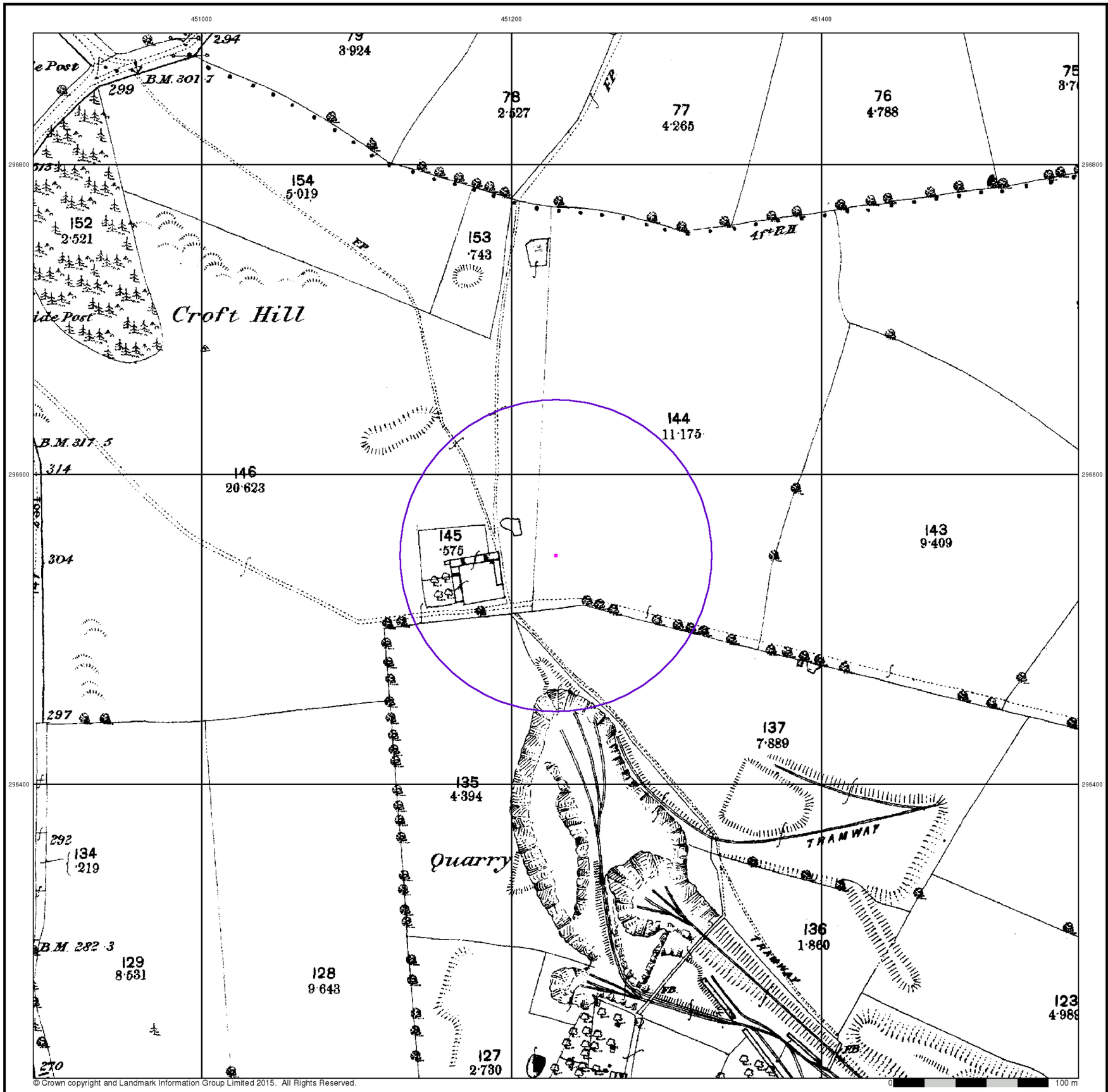

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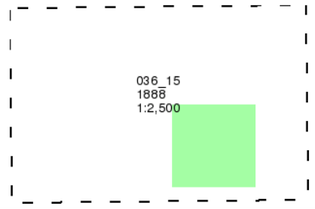
Leicestershire

Published 1888

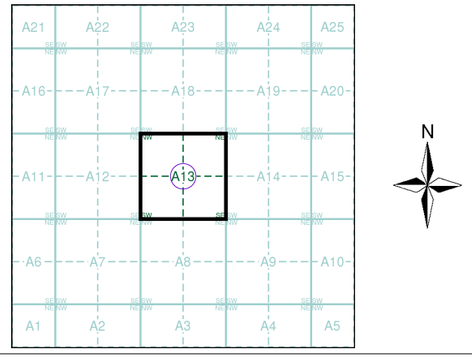
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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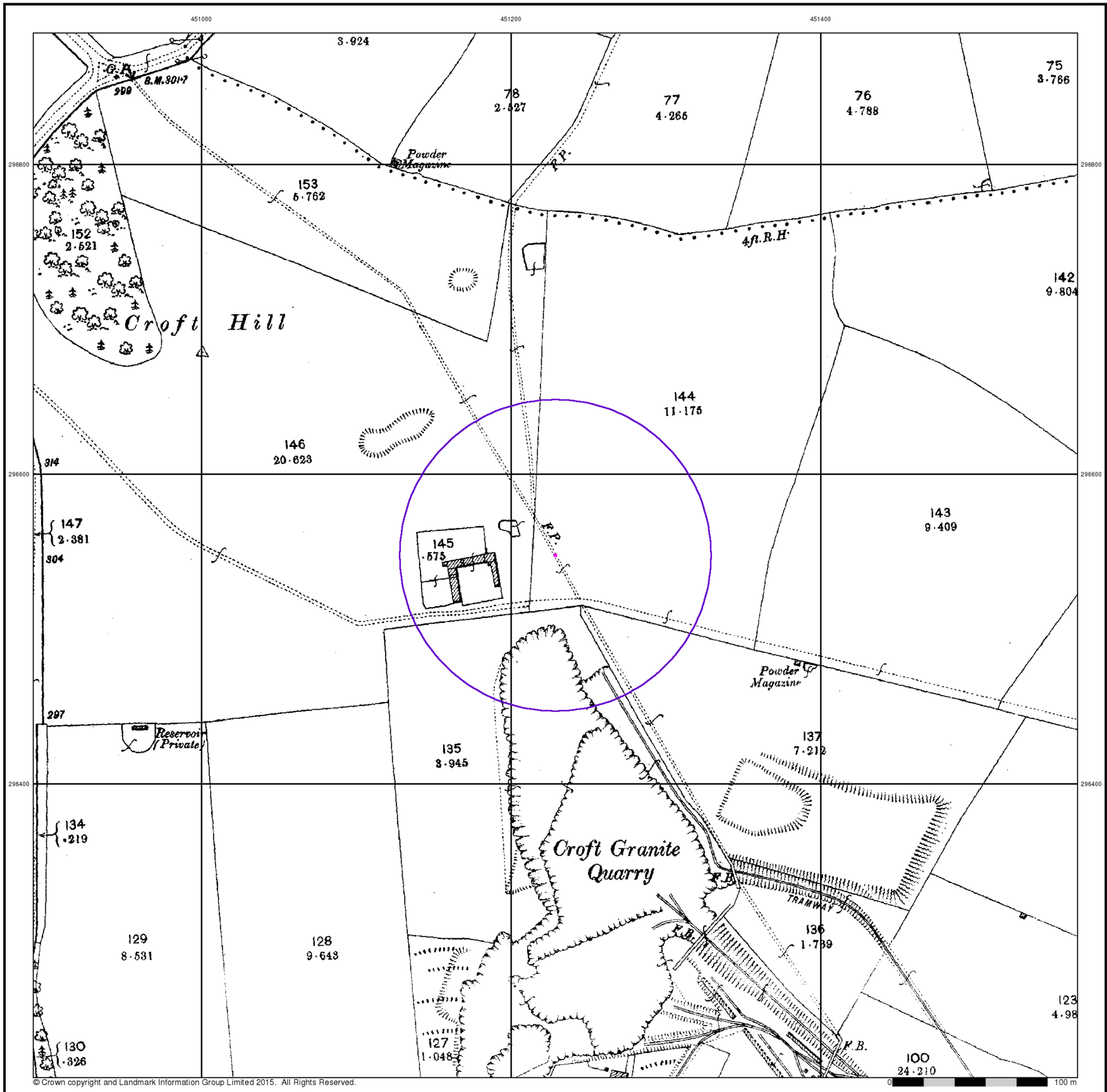

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Leicestershire

Published 1903

Source map scale - 1:2,500

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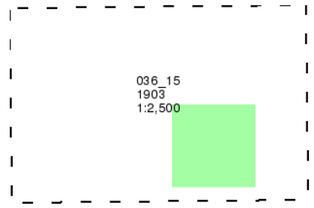
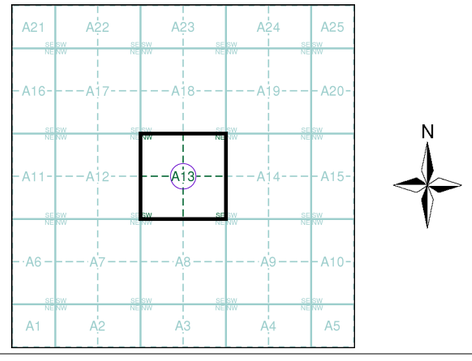
Map Name(s) and Date(s)



Historical Map - Segment A13



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Slice:	A
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Search Buffer (m):	100

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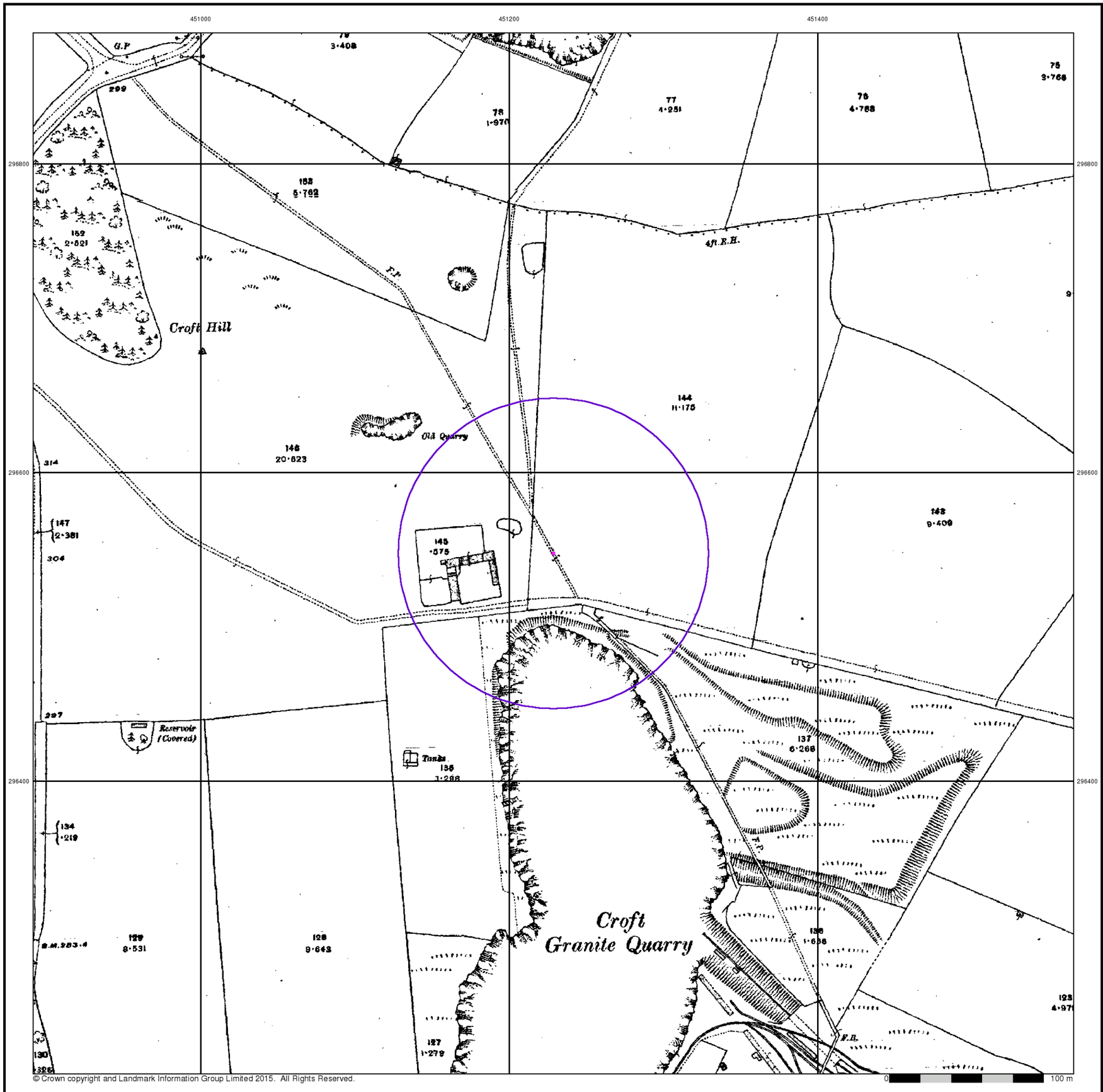

0 100 m

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Leicestershire

Published 1916

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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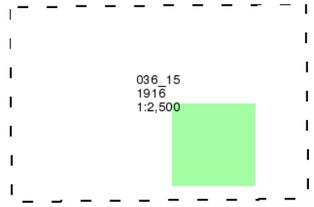
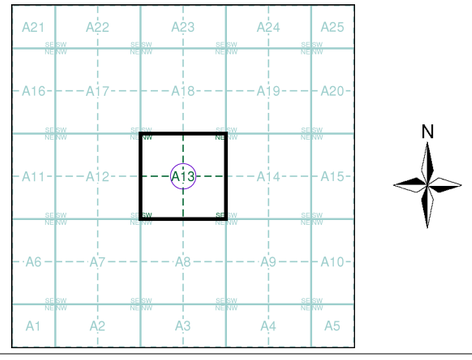


Historical Map - Segment A13



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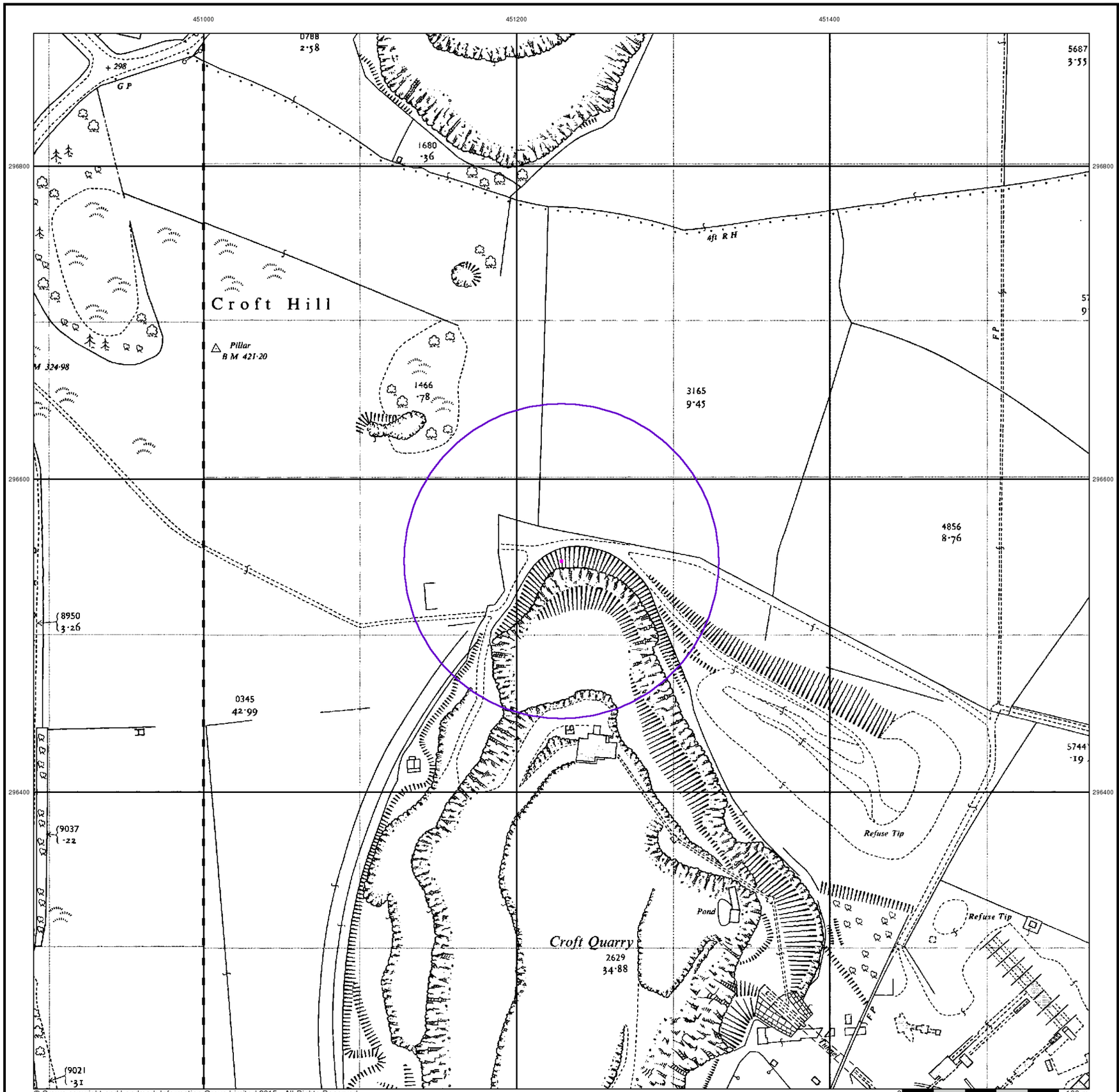

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Ordnance Survey Plan

Published 1963

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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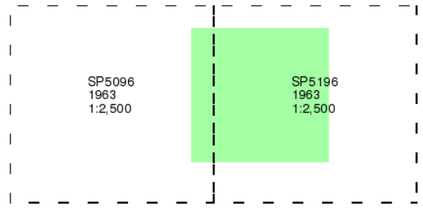
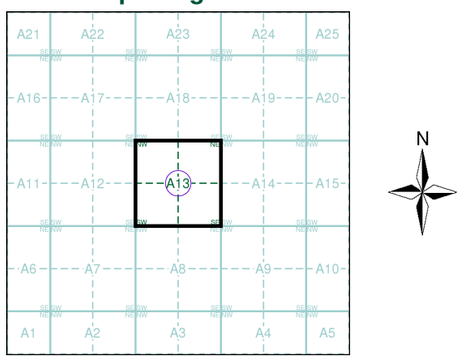


Historical Map - Segment A13



Order Details

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Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

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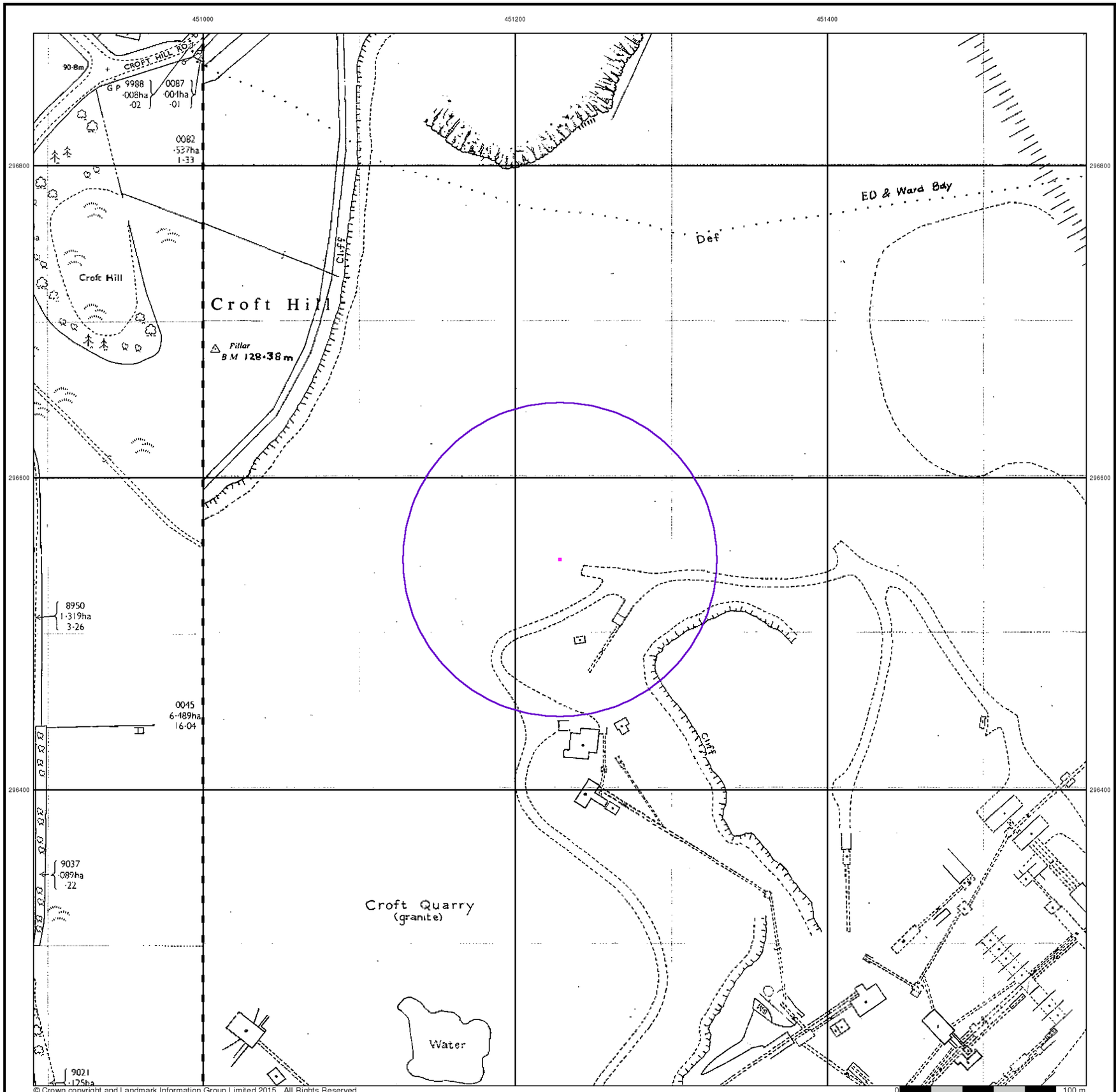

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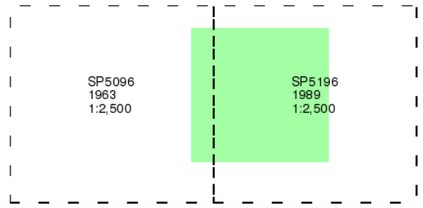
Additional SIMs

Published 1963 - 1989

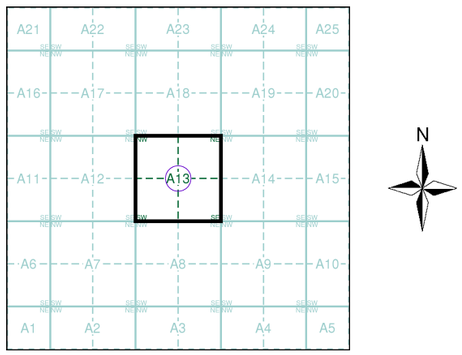
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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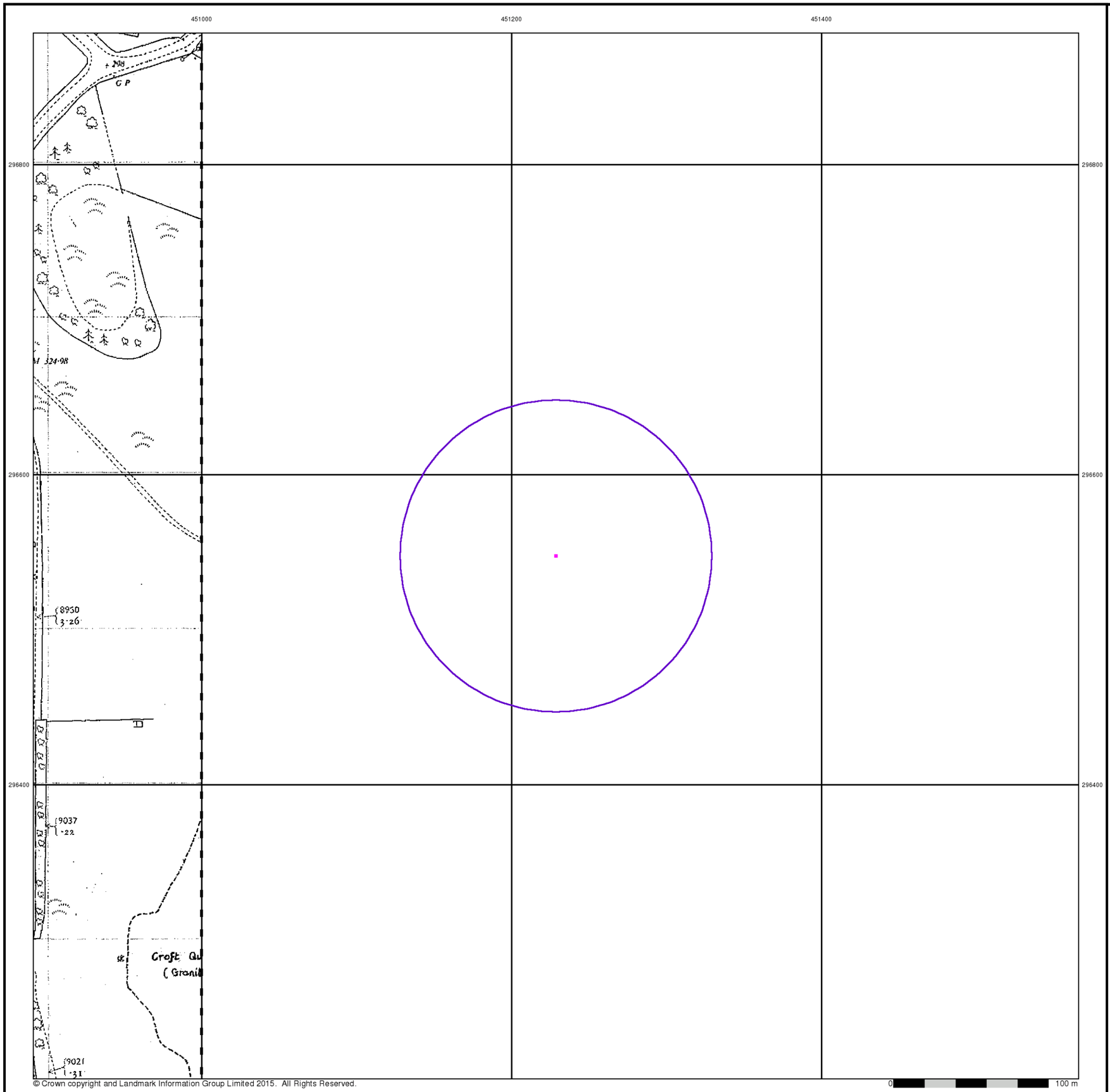
Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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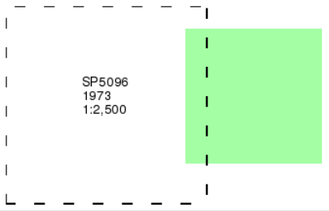
Supply of Unpublished Survey Information

Published 1973

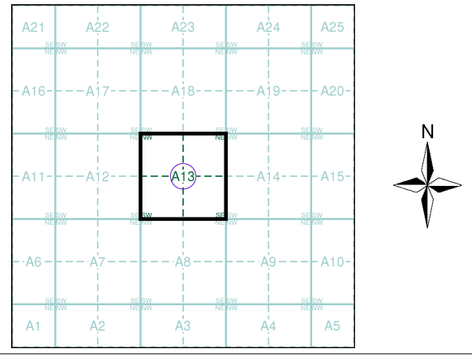
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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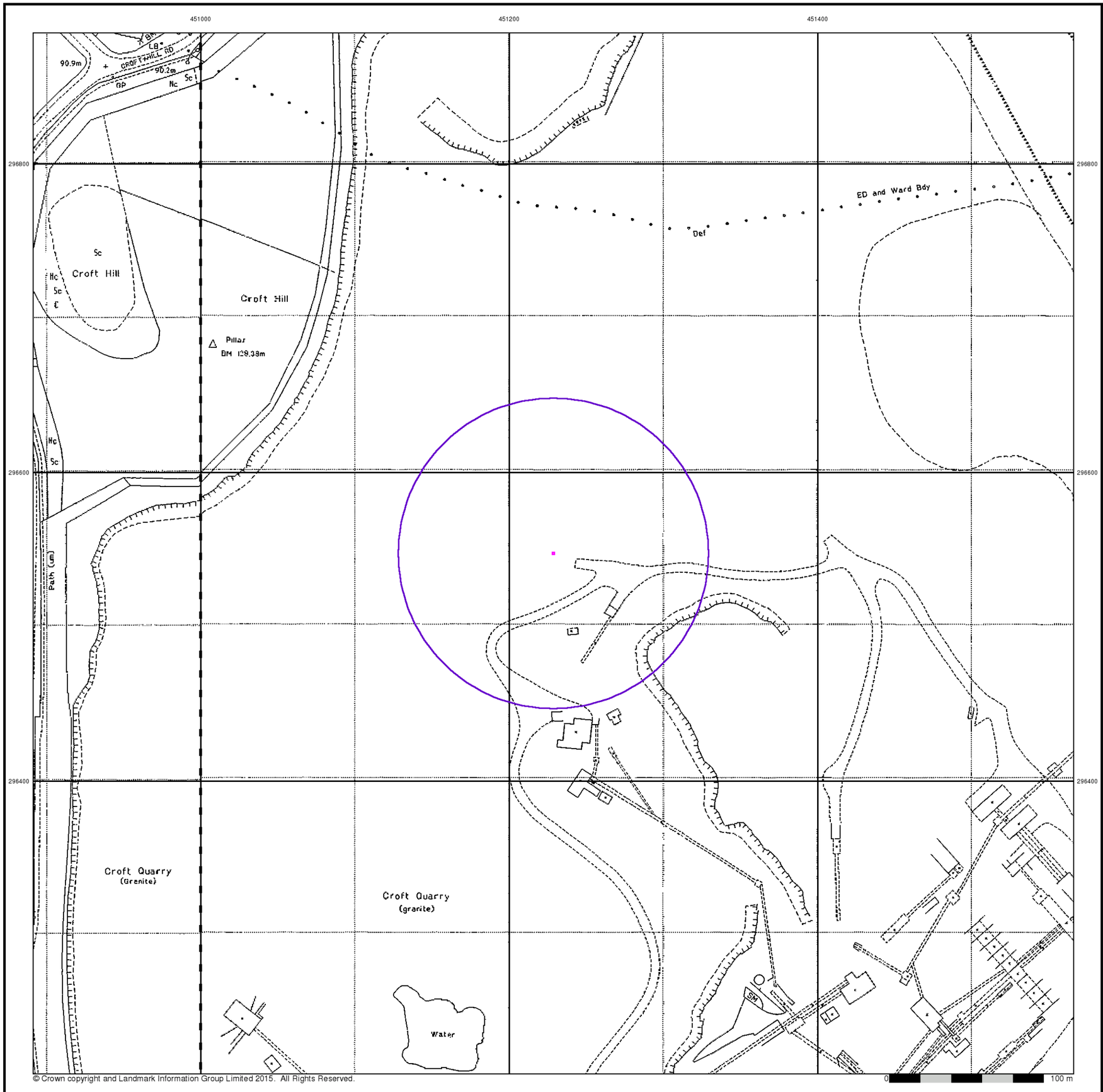

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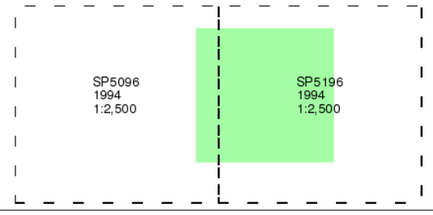
Large-Scale National Grid Data

Published 1994

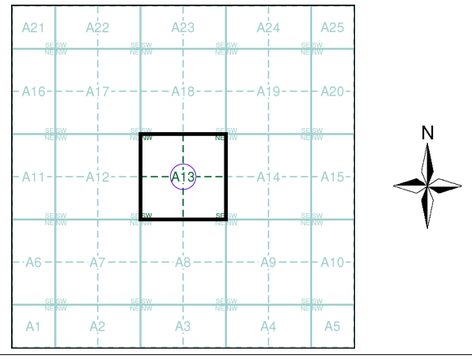
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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Search Buffer (m):	100

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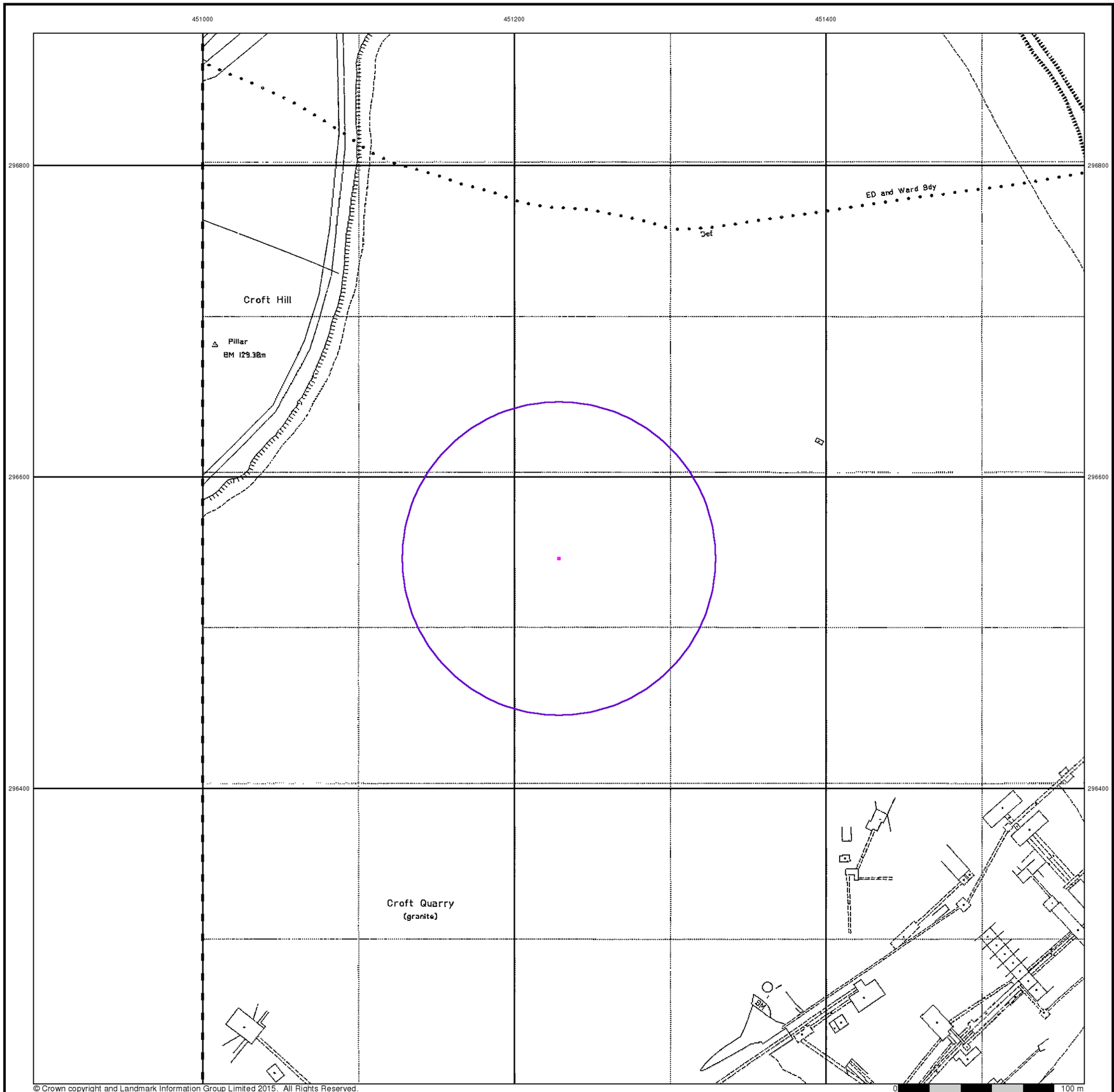

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consulting

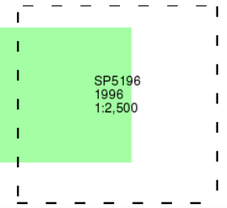
Large-Scale National Grid Data

Published 1996

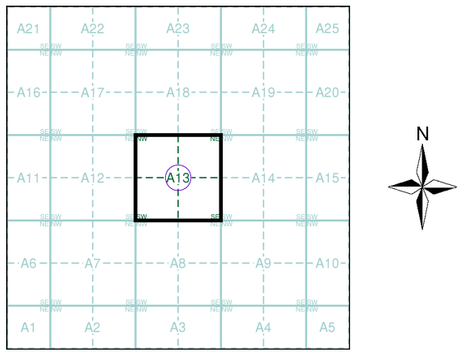
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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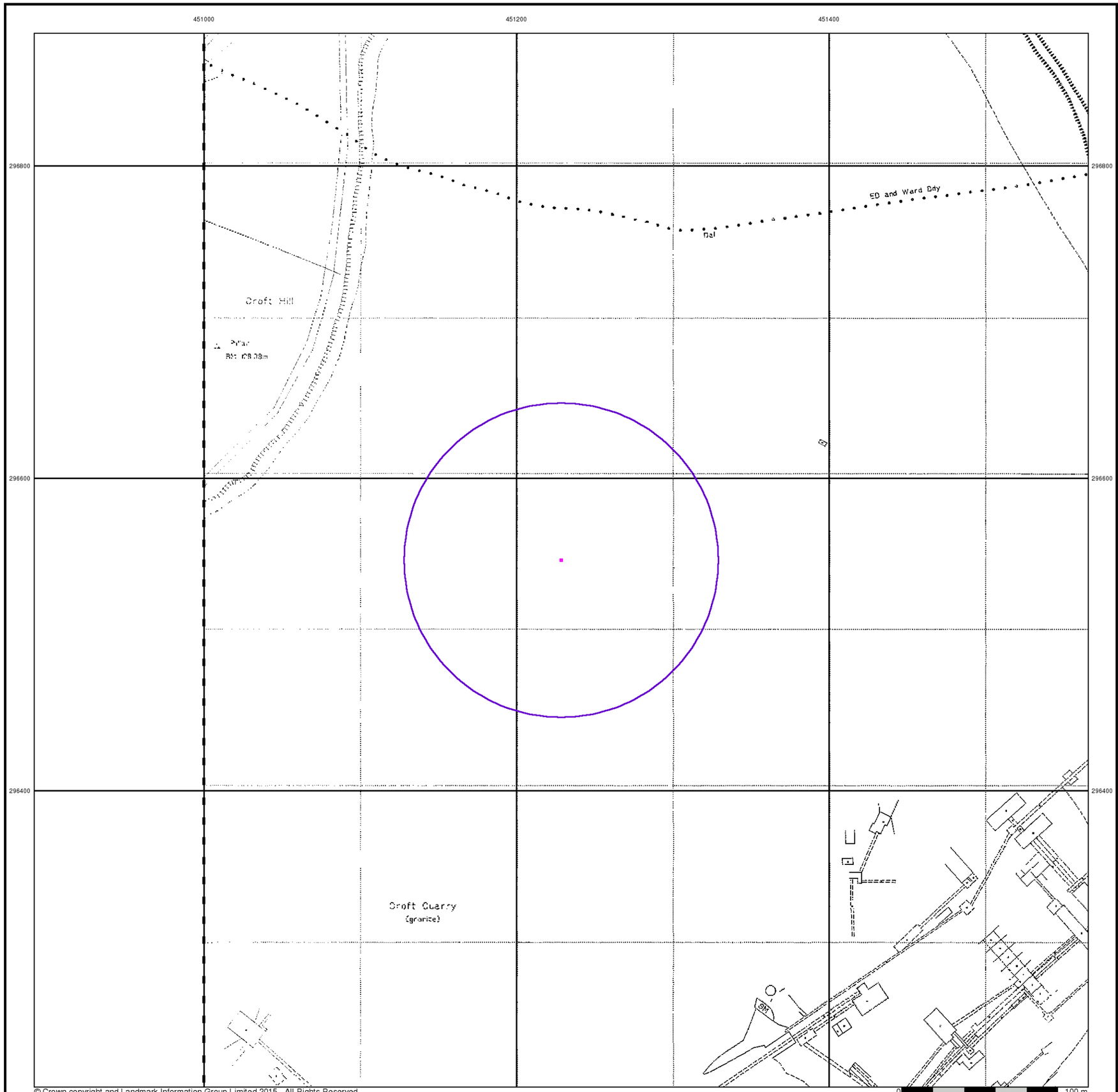

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Large-Scale National Grid Data

Published 1996

Source map scale - 1:2,500

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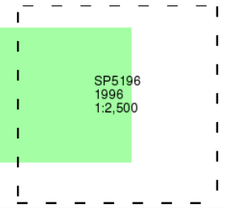
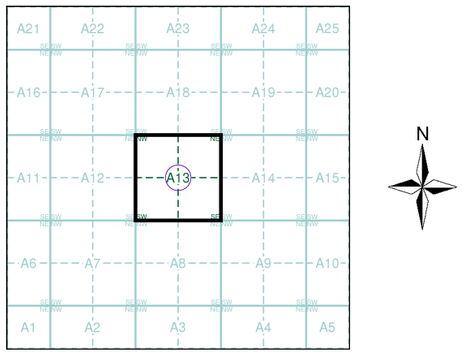


Historical Map - Segment A13



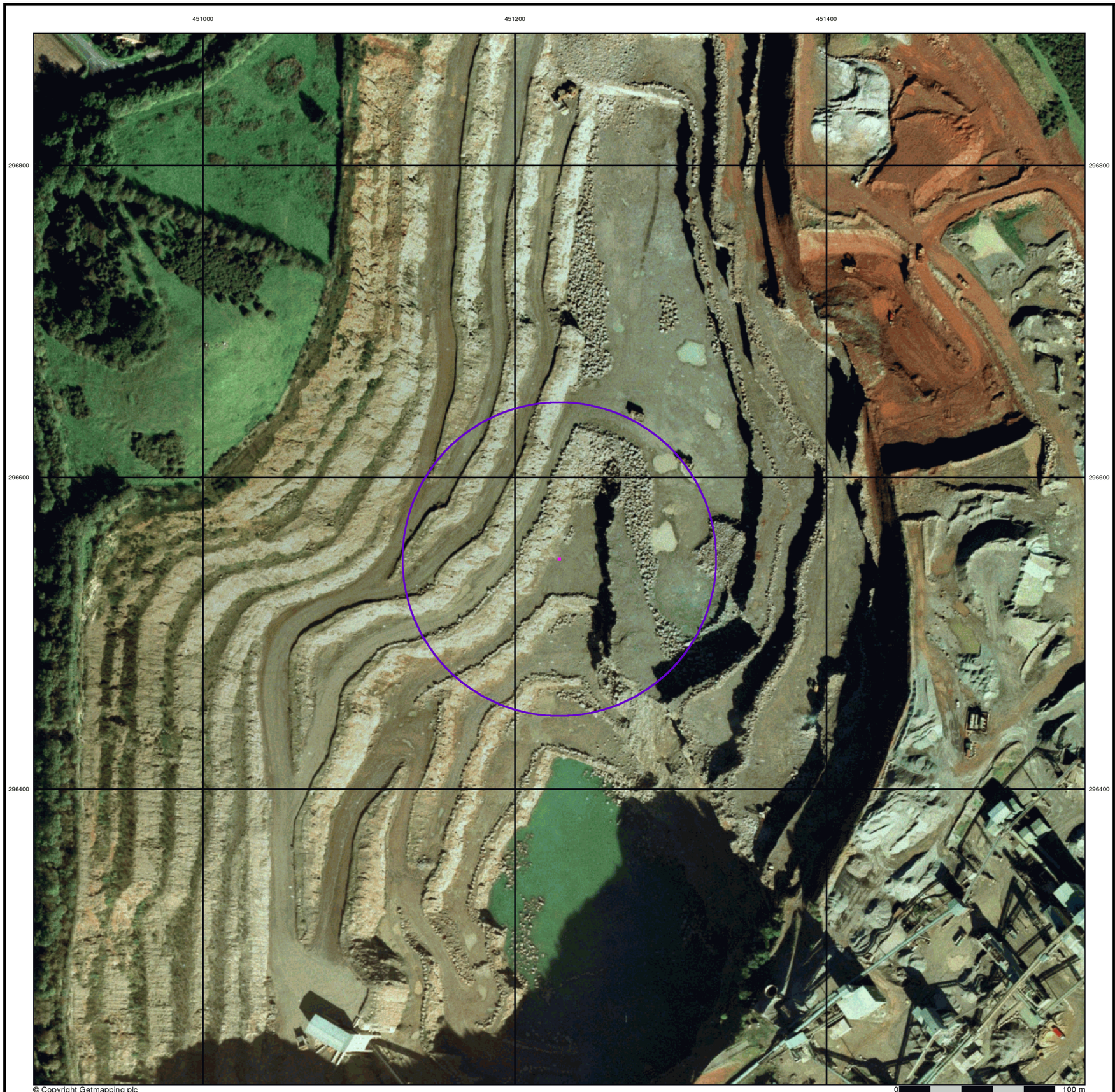
Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

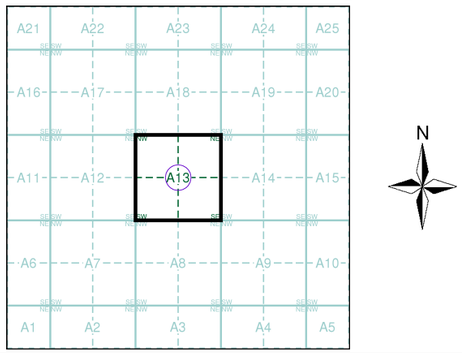


Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Landmark INFORMATION GROUP
Tel: 0844 844 9952
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Environmental Report

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
109996096_1_1

Customer Reference:
65543

National Grid Reference:
451230, 296550

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

Aggregate Industries, Croft Quarry
Coventry Road, Croft
LEICESTER
LE9 3GP

Client Details:

Miss K Mair
ESI Ltd
New Zealand House
160 Abbey Foregate
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SY2 6FD

Prepared For:

Aggregate Industries UK Limited
Bardon Hall
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Contents

Introduction

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

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

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Natural England Copyright Notice

Ove Arup Copyright Notice

Peter Brett Associates Copyright Notice

Radon Potential dataset Copyright Notice

Report Version v50.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1		Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			1	20
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 6			2	9
Local Authority Pollution Prevention and Control Enforcements	pg 8				1
Nearest Surface Water Feature	pg 8				Yes
Pollution Incidents to Controlled Waters	pg 8		1		3
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 8			1	2
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points	pg 9				2
Substantiated Pollution Incident Register					
Water Abstractions	pg 10				8 (*6)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 14	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 14	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Detailed River Network Lines					n/a
Detailed River Network Offline Drainage					n/a

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 15				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 15				1
Local Authority Landfill Coverage	pg 15	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 15				1
Potentially Infilled Land (Non-Water)	pg 15				1
Potentially Infilled Land (Water)	pg 15		3	1	11
Registered Landfill Sites	pg 16				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 17	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 17	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 19		1	1	
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages	pg 20				Yes
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 20	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 20		Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 20		Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 22				27
Fuel Station Entries	pg 24				1
Points of Interest - Commercial Services	pg 24				5
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 24		1	4	30
Points of Interest - Public Infrastructure	pg 27				7
Points of Interest - Recreational and Environmental	pg 28				1
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 29	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 29	1	1		1
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	89	2	451300 296600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	159	2	451350 296650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	169	2	451300 296700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	200	2	451400 296650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	279	2	450950 296548
1	**Discharge Consents** Operator: Camas (Uk) Ltd Property Type: Undefined Or Other Location: The Toilet Block At Camas/Leics, The Toilet Block Serving The, Companys Compacted Pipes Plant, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/14418/Sg Permit Version: 1 Effective Date: 11th June 1972 Issued Date: 11th June 1972 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Underground Strata **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A13SE (SE)	302	3	451400 296300
2	**Discharge Consents** Operator: Mr Dennis Barrow Property Type: CHURCH/MONASTERY/ABBEY/RELIGIOUS RETREAT/ASSOCIATION HQ Location: St Michael And All Angels Church, Hill Street, Croft, Leicestershire, Le9 3gt Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: Eprgp3427xh Permit Version: 1 Effective Date: 20th December 2010 Issued Date: 20th December 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Onto Land Receiving Water: Ground Waters **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NW (S)	566	3	451037 296015
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Croft, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/03632/O Permit Version: 1 Effective Date: 7th November 1973 Issued Date: 7th November 1973 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar Or Tribs **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	703	3	451500 295900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Croft, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: Dt/8045 Permit Version: 1 Effective Date: 30th May 1963 Issued Date: 30th May 1963 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar (Tributary) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	703	3	451500 295900
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Winston Avenue Croft Cso Winston Avenue, Croft, Countesthorpe, Leicestershire, Le9 3gq Authority: Environment Agency, Midlands Region Catchment Area: Not Supplied Reference: Tsc4121 Permit Version: 2 Effective Date: 18th May 2016 Issued Date: 18th May 2016 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NE (S)	717	3	451484 295878
4	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 2 Effective Date: 18th October 1995 Issued Date: 18th October 1995 Revocation Date: 25th July 1996 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	709	3	451690 296010
4	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	709	3	451690 296010

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 4 Effective Date: 6th January 2001 Issued Date: 6th January 2001 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	720	3	451580 295920
5	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 3 Effective Date: 26th July 1996 Issued Date: 26th July 1996 Revocation Date: 5th January 2001 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	720	3	451580 295920
5	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 2 Effective Date: 18th October 1995 Issued Date: 18th October 1995 Revocation Date: 25th July 1996 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	720	3	451580 295920
5	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	720	3	451580 295920

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	740	3	451650 295940
6	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Process Water Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	748	3	451650 295930
7	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/45029/T Permit Version: 1 Effective Date: 25th July 1996 Issued Date: 25th July 1996 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	754	3	451820 296080
7	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Process Water Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	772	3	451850 296090

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	797	3	451850 296050
8	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Croft, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/03632/O Permit Version: 1 Effective Date: 7th November 1973 Issued Date: 7th November 1973 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Soar Or Tribs **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	800	3	451500 297300
9	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 3 Effective Date: 26th July 1996 Issued Date: 26th July 1996 Revocation Date: 5th January 2001 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	883	3	452070 296280
9	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 2 Effective Date: 18th October 1995 Issued Date: 18th October 1995 Revocation Date: 25th July 1996 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	883	3	452070 296280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Discharge Consents** Operator: Aggregate Industries (Uk) Limited Property Type: Undefined Or Other Location: Croft Quarry Marian'S Way, Coventry Road, Croft, Leicestershire, Le9 3gp Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: T/50/08259/T Permit Version: 1 Effective Date: 3rd December 1980 Issued Date: 3rd December 1980 Revocation Date: 17th October 1995 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: River Soar **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	883	3	452070 296280
10	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Huncote, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Upper Soar Catchment To Confluence With Sence Reference: Dt/8047 Permit Version: 1 Effective Date: 30th May 1963 Issued Date: 30th May 1963 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Thurlaston Brook (River Soar) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A19NW (NE)	975	3	451700 297400
11	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries Ltd Location: Huncote Road, Croft, LEICESTER, Leicestershire, LE9 3GT Authority: North West Leicestershire District Council, Environmental Health Department Permit Reference: A/89/3/15 Dated: 7th May 2002 Process Type: Local Authority Air Pollution Control Description: PG3/15 Mineral drying and roadstone coating processes **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	406	4	451179 296145
12	**Local Authority Pollution Prevention and Controls** Name: Ecc Quarries Ltd Location: Croft Works, Huncote Road, Croft, LEICESTER, Liecestershire, LE9 3GS Authority: Blaby District Council, Environmental Health Department Permit Reference: Not Given Dated: 1st March 1992 Process Type: Local Authority Air Pollution Control Description: PG3/8 Quarry processes including roadstone plants and the size reduction of bricks, tiles and concrete **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A8NE (SE)	447	5	451437 296153
13	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries Uk Ltd (Masterblock) Location: Croft Quarry, Marions Way, Coventry Road, LEICESTER, Leicestershire, LE9 3GS Authority: Blaby District Council, Environmental Health Department Permit Reference: MAS/001/11/ARF Dated: 15th November 2000 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	520	5	451601 296185
13	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries Location: Croft Quarry, Marions Way, Coventry Road, LEICESTER, Leicestershire, LE9 3GP Authority: Blaby District Council, Environmental Health Department Permit Reference: QUA/001/11/ARF Dated: 6th August 1997 Process Type: Local Authority Pollution Prevention and Control Description: PG3/8 Quarry processes including roadstone plants and the size reduction of bricks, tiles and concrete **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	520	5	451601 296185

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries Location: Croft Quarry, Marions Way, Coventry Road, Croft, Leicester, LE9 3GS Authority: Blaby District Council, Environmental Health Department Permit Reference: ASP/001/08/ARH Dated: 19th April 1993 Process Type: Local Authority Air Pollution Control Description: PG3/15 Mineral drying and roadstone coating processes **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	520	5	451601 296185
13	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries (Bardon Concrete) Location: Croft Quarry, Marions Way, Coventry Road, Croft, Leicester, Le9 3gs Authority: Blaby District Council, Environmental Health Department Permit Reference: BAR/001/11/ARF Dated: 31st March 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	520	5	451601 296185
13	**Local Authority Pollution Prevention and Controls** Name: Aggregate Industries (Charcon Specialist) Location: Croft Quarry, Marions Way, Coventry Road, Croft, Leicester, Le9 3gs Authority: Blaby District Council, Environmental Health Department Permit Reference: CHA/001/11/ARF Dated: 23rd March 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	520	5	451601 296185
13	**Local Authority Pollution Prevention and Controls** Name: Bardon Concrete Location: Croft Quarry, Marions Way, Coventry Road, CROFT, Leicestershire, LE9 Authority: Blaby District Council, Environmental Health Department Permit Reference: Not Given Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	530	5	451577 296149
13	**Local Authority Pollution Prevention and Controls** Name: Ecc (Building Products) Ltd Location: Croft Works, Croft, LEICESTER, Leicestershire, LE9 Authority: Blaby District Council, Environmental Health Department Permit Reference: Not Given Dated: 1st March 1992 Process Type: Local Authority Air Pollution Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	539	5	451606 296164
13	**Local Authority Pollution Prevention and Controls** Name: R M C (East Midlands) Ltd Location: Croft Quarry, Marions Way / Coventry Road, Croft, LEICESTER, Leicestershire, LE9 3GP Authority: Blaby District Council, Environmental Health Department Permit Reference: Not Given Dated: 8th August 1997 Process Type: Local Authority Air Pollution Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Site Closed** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	544	5	451610 296161
14	**Local Authority Pollution Prevention and Controls** Name: Main Street Garage Location: 9 Main Street, Huncote, LEICESTER, Leicestershire, LE9 3AU Authority: Blaby District Council, Environmental Health Department Permit Reference: MSG/001/10/JCR Dated: 22nd December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	968	5	451660 297414

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Local Authority Pollution Prevention and Control Enforcements** Location: Croft Works, Marions Way, Coventry Road, Croft, Le9 3gs Type: Air Pollution Control Enforcement Notice Reference: 98000370 Date Issued: 11th December 1997 Enforcement Date: Not Supplied Details: Not Supplied Positional Accuracy: Manually positioned to the address or location	A14SW (SE)	523	5	451631 296214
	Nearest Surface Water Feature	A12NE (W)	501	-	450736 296640
16	**Pollution Incidents to Controlled Waters** Property Type: Quarrying (Hard Rock) Location: Ecc Quarry, Huncote Road, CROFT Authority: Environment Agency, Midlands Region Pollutant: Oils - Tars/Bitumen Note: No Adverse Effects; Fire - Bitumen Incident Date: 1st December 1996 Incident Reference: 2801650 Catchment Area: Trent Catchment : Upper Soar To Confluence With Sence Receiving Water: Not Given Cause of Incident: Fire Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	132	3	451140 296450
17	**Pollution Incidents to Controlled Waters** Property Type: Construction Location: Cammas Quarry, CROFT Authority: Environment Agency, Midlands Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Amenity Affected; O/L No 4 Black Discolouration Incident Date: 21st March 1996 Incident Reference: 2800453 Catchment Area: Trent Catchment : Upper Soar To Confluence With Sence Receiving Water: Watercourse Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	673	3	451310 295880
18	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Rising Main Location: Huncote. Authority: Environment Agency, Midlands Region Pollutant: Crude Sewage Note: Burst Sewage Pipe Poss Leading To Nearby Watercourse Incident Date: 29th December 1998 Incident Reference: 2805487 Catchment Area: Trent Catchment : Upper Soar To Confluence With Sence Receiving Water: Not Given Cause of Incident: Leaking Underground Pipe Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	675	3	451400 297200
19	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: ABINGDON Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th September 1989 Incident Reference: W1890458 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	765	3	450700 297100
	River Quality Name: Thurlaston Bk GQA Grade: River Quality B Reach: Conf. Normanton Bk To Conf. R. Soar Estimated Distance (km): 4 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A14NW (NE)	466	3	451598 296831

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	River Quality Name: Soar R GQA Grade: River Quality C Reach: Stoney Stanton Stw To Thurlaston Bk Estimated Distance (km): 2.7 Flow Rate: Flow less than 0.62 cumecs Flow Type: River Year: 2000	A8SW (S)	751	3	451091 295810
	River Quality Name: Broughton Astley Bk GQA Grade: River Quality B Reach: Broughton Astley Stw To Conf. R. Soar Estimated Distance (km): 2.3 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A9NE (SE)	891	3	452034 296169
20	**River Quality Chemistry Sampling Points** Name: Soar River Reach: Stoney Stanton Stw To Thurlaston Brook Estimated Distance: 2.70 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied	A8NW (S)	645	3	451149 295908

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**River Quality Chemistry Sampling Points** Name: Thurlaston Beck Reach: Confluence Normanton Brook To Confluence River Soar Estimated Distance: 4.00 Objective: Not Supplied Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade A - Very Good Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade B - Good Compliance: Not Supplied	A18NE (N)	782	3	451500 297280
22	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0098 Permit Version: 100 Location: Collecting Pool, Discharging To River Soar Authority: Environment Agency, Midlands Region Abstraction: Extractive: Process water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry/Quarry Overflow - Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 23rd December 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	509	3	451600 296200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0098 Permit Version: 100 Location: Collecting Pool, Discharging To River Soar Authority: Environment Agency, Midlands Region Abstraction: Private Water Undertaking: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry/Quarry Overflow - Pool Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 23rd December 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	509	3	451600 296200
23	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0097 Permit Version: 101 Location: Croft Quarry - River Soar Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry - River Soar Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th March 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	718	3	451640 295960
23	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0097 Permit Version: 100 Location: Croft Quarry - River Soar Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry - River Soar Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 27th December 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	718	3	451640 295960
23	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0097 Permit Version: 102 Location: Croft Quarry - River Soar Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry - River Soar Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	745	3	451669 295947

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0097 Permit Version: 101 Location: Croft Quarry - River Soar (2) Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry - River Soar Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th March 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	750	3	451780 296040
24	**Water Abstractions** Operator: Aggregate Industries Uk Limited Licence Number: 03/28/50/0097 Permit Version: 100 Location: Croft Quarry - River Soar (2) Authority: Environment Agency, Midlands Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Croft Quarry - River Soar Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 27th December 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	750	3	451780 296040
25	**Water Abstractions** Operator: British Worm Breeders Licence Number: 03/28/50/0125 Permit Version: 100 Location: Potters Kiln,Nr Croft - Borehole Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Potters Kiln,Nr Croft - Borehole Authorised Start: 01 May Authorised End: 30 September Permit Start Date: 4th April 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12SW (W)	993	3	450240 296460
	Water Abstractions Operator: A H Chantwell & Sons (Farmers) Ltd Licence Number: 03/28/50/0024 Permit Version: 100 Location: Flash Farm Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Flash Farm Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NE (E)	1473	3	452700 296600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr R C Holt Licence Number: 03/28/50/0074 Permit Version: 100 Location: Potters Marston Hall Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Potters Marston Hall Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11SW (W)	1549	3	449700 296300
	Water Abstractions Operator: Acresford Sand & Gravel Ltd Licence Number: 03/28/50/0113 Permit Version: 100 Location: Huncote, Leics - Catchpit Authority: Environment Agency, Midlands Region Abstraction: Extractive: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Huncote,Leics Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th October 1981 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23NW (N)	1653	3	451200 298200
	Water Abstractions Operator: Mr F S Chapman Licence Number: 03/28/50/0063 Permit Version: 100 Location: Langham Bridge Farm - Well Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 1a Knighton Place Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1873	3	453100 296600
	Water Abstractions Operator: Mr N E Shropshire Licence Number: 03/28/50/0077 Permit Version: 100 Location: Pingle Farm Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pingle Farm Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1877	3	451900 298300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Acs Limited Licence Number: 03/28/50/0134 Permit Version: 100 Location: Green Lodge, Huncote - Borehole Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Green Lodge, Huncote - Borehole Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1981	3	451930 298400
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 23 Leicestershire Scale: 1:100,000	A13NE (NE)	0	3	451229 296548
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A13NE (NE)	0	2	451229 296548
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
	Detailed River Network Lines None				
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Historical Landfill Sites** Licence Holder: ECC Quarries Limited Location: Croft Landfill, Croft, Blaby, Leicestershire Name: Croft Landfill, Croft, Blaby Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD28348 First Input Date: 31st December 1937 Last Input Date: 30th April 1989 Specified Waste Type: Deposited Waste included Industrial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2400/1070 BGS Ref: Not Supplied Other Ref: 0067, GDO 79, 167	A14SW (E)	536	3	451763 296506
27	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Cheney End, Huncote, Leicestershire Name: Cheney End, Huncote Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD22607 First Input Date: 31st December 1935 Last Input Date: 31st December 1965 Specified Waste Type: Deposited Waste included Industrial, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2400/1304 BGS Ref: Not Supplied Other Ref: GDO 286	A19NW (N)	989	3	451603 297462
28	**Licensed Waste Management Facilities (Locations)** Licence Number: 402354 Location: Croft Masterblock, Maions Way, Coventry Road, Croft, Leics, LE9 3GQ Operator Name: Aggregate Industries U K Ltd Operator Location: Not Supplied Authority: Environment Agency - Midlands Region, East Area Site Category: Treatment of waste to produce soil <75,000 tpy **Licence Status: Issued** Issued: 29th June 2015 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	952	3	452072 296107
	Local Authority Landfill Coverage Name: Leicestershire County Council - Has supplied landfill data		0	6	451229 296548
	Local Authority Landfill Coverage Name: Blaby District Council - Has no landfill data to supply		0	5	451229 296548
29	**Local Authority Recorded Landfill Sites** Location: Not Supplied Reference: 79 Authority: Leicestershire County Council **Last Reported Status: Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A14SW (E)	544	6	451770 296505
30	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A18NW (N)	810	-	451047 297336
31	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1904	A13NW (NW)	34	-	451199 296565
32	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1904	A13SE (SE)	179	-	451392 296474

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1904	A13NW (N)	194	-	451219 296741
34	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1904	A13SW (SW)	294	-	450961 296428
35	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NW (NE)	597	-	451740 296854
36	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A19SW (NE)	617	-	451661 296988
37	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NW (E)	618	-	451800 296783
38	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (S)	622	-	451131 295933
39	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NW (E)	626	-	451834 296704
40	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NW (E)	654	-	451876 296643
41	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NE (E)	721	-	451948 296593
42	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A14NE (E)	775	-	452003 296562
43	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SE (S)	802	-	451509 295796
44	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A9SW (SE)	832	-	451586 295797
45	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18NE (N)	861	-	451414 297388
46	**Registered Landfill Sites** Licence Holder: Land & Properties (E.C.C) Ltd Licence Reference: 67 Site Location: Croft Landfill Site, Croft, Leicester, Leicestershire Licence Easting: 451850 Licence Northing: 296200 Operator Location: Highlands Farm, Henley On Thames, Oxfordshire Authority: Environment Agency - Midlands Region, Lower Trent Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Status: Licence known to be surrenderedSurrendered Dated: 27th February 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Cement Asbestos - Sheeting/Tiles; Construction And Demolition Wastes; Ind. Non-Haz. Waste; Mine And Quarry Wastes; Oil From Interceptors Prohibited Waste: Asbestos	A9NW (SE)	713	3	451850 296200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Unnamed Igneous Intrusion, Ordovician To Silurian	A13NE (NE)	0	2	451229 296548
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	2	451229 296548
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A13NE (NE)	94	2	451279 296626
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (W)	229	2	451000 296548
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (SE)	299	2	451436 296333
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A13SE (E)	309	2	451514 296431
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A13SE (SE)	329	2	451407 296272

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A8NE (S)	537	2	451299 296016
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NE (S)	604	2	451349 295956
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A8NW (SW)	668	2	450941 295945
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	672	2	451823 296860
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A14NW (NE)	701	2	451863 296844
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NW (N)	769	2	451212 297316

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NW (W)	780	2	450483 296776
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (E)	810	2	452000 296793
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A17NE (NW)	914	2	450705 297296
47	**BGS Recorded Mineral Sites** Site Name: Croft Quarry Location: , Croft, Leicester, Le9 6gs Source: British Geological Survey, National Geoscience Information Service Reference: 2723 Type: Opencast **Status: Active** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Ordovician Geology: South Leicestershire Diorite Complex Commodity: Igneous and Metamorphic Rock Positional Accuracy: Unknown	A13SW (S)	250	2	451200 296300
48	**BGS Recorded Mineral Sites** Site Name: Huncote Location: , Huncote, Narborough, Leicestershire Source: British Geological Survey, National Geoscience Information Service Reference: 27703 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Ordovician Geology: South Leicestershire Diorite Complex Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A18SW (N)	375	2	451195 296920
	BGS Measured Urban Soil Chemistry No data available				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: Leicester Count Id: 652 Arsenic Minimum Concentration: 4.00 mg/kg Arsenic Average Concentration: 14.00 mg/kg Arsenic Maximum Concentration: 84.00 mg/kg Cadmium Minimum Concentration: 0.30 mg/kg Cadmium Average Concentration: 0.50 mg/kg Cadmium Maximum Concentration: 9.30 mg/kg Chromium Minimum Concentration: 42.00 mg/kg Chromium Average Concentration: 86.00 mg/kg Chromium Maximum Concentration: 771.00 mg/kg Lead Minimum Concentration: 16.00 mg/kg Lead Average Concentration: 109.00 mg/kg Lead Maximum Concentration: 2053.00 mg/kg Nickel Minimum Concentration: 10.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 87.00 mg/kg	A19SW (NE)	654	2	451700 297000
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	45	2	451189 296567
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	173	2	451385 296474
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	214	2	451016 296559
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	218	2	451444 296521
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	227	2	451436 296457
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	2	451229 296548

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	**Contemporary Trade Directory Entries** Name: Sovereign Motors Location: 8, The Green, Croft, Leicester, LE9 3EQ Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	558	-	451350 296004
50	**Contemporary Trade Directory Entries** Name: Aggregate Industries Ltd Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Classification: Sand, Gravel & Other Aggregates **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	561	-	451031 296023
50	**Contemporary Trade Directory Entries** Name: Aggregate Industries Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Classification: Concrete Products **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	561	-	451031 296023
50	**Contemporary Trade Directory Entries** Name: Aggregate Industries Ltd Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Classification: Sand, Gravel & Other Aggregates **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	561	-	451031 296023
50	**Contemporary Trade Directory Entries** Name: Ready Mixed Concrete (East Midlands) Ltd Location: Croft House, Huncote Road, Croft, Leicester, LE9 3GS Classification: Concrete & Mortar Ready Mixed **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (SW)	569	-	451002 296026
51	**Contemporary Trade Directory Entries** Name: Shires Spraybooth Ltd Location: 3, Marston Road, Croft, Leicester, LE9 3GX Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	564	-	450813 296166
52	**Contemporary Trade Directory Entries** Name: Express Asphalt Location: Greystones, Huncote Road, Croft, Leicester, Leicestershire, LE9 3GT Classification: Asphalt & Macadam Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	567	-	451104 295995
53	**Contemporary Trade Directory Entries** Name: Roofline Replacement Co Ltd Location: School Hall, Hill Street, Croft, Leicester, LE9 3EG Classification: Fascias and Soffits **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	577	-	451182 295973
54	**Contemporary Trade Directory Entries** Name: Direct Windows (Uk) Ltd Location: Unit C, Gemini House, Winston Avenue, Croft, LE9 3GQ Classification: Window Frame Manufacturers' Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	818	-	451533 295788
54	**Contemporary Trade Directory Entries** Name: Croft Garage Leicester Ltd Location: Gemini House, Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	831	-	451540 295778
54	**Contemporary Trade Directory Entries** Name: Direct Windows Location: Gemini House, Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Window Film Manufacturers and Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	831	-	451540 295778
54	**Contemporary Trade Directory Entries** Name: Atacama Audio Location: Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Hi-Fi Equipment Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	846	-	451558 295769

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**Contemporary Trade Directory Entries** Name: Magenta Fashions Location: Winston Av, Croft, Leicester, Leicestershire, LE9 3GQ Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9SW (SE)	871	-	451572 295748
55	**Contemporary Trade Directory Entries** Name: Gemini Associates Ltd Location: Unit D, Gemini House, Winston Avenue, Croft, LE9 3GQ Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	831	-	451537 295777
55	**Contemporary Trade Directory Entries** Name: Injection Plastics Ltd Location: Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	843	-	451496 295749
56	**Contemporary Trade Directory Entries** Name: Aggregate Industries Location: Croft Quarry,Coventry Road, Croft, Leicester, Leicestershire, LE9 3GP Classification: Asphalt & Macadam Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	832	-	451860 296007
57	**Contemporary Trade Directory Entries** Name: Insitu Display Location: Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Shop Fittings Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	837	-	451629 295814
57	**Contemporary Trade Directory Entries** Name: Snoody Ltd Location: Winston Av, Croft, Leicester, Leicestershire, LE9 3GQ Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9SW (SE)	839	-	451616 295804
57	**Contemporary Trade Directory Entries** Name: Accomplished Automation Ltd Location: Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Automation Systems & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A9SW (SE)	842	-	451618 295802
57	**Contemporary Trade Directory Entries** Name: Croft Backstop Ltd Location: Winston Av, Croft, Leicester, LE9 3GQ Classification: Commercial Vehicle Component Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9SW (SE)	869	-	451624 295774
58	**Contemporary Trade Directory Entries** Name: T R Collings Location: 12, Arbor Road, Croft, Leicester, LE9 3GD Classification: Machine Tool Accessories & Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	848	-	451301 295703
59	**Contemporary Trade Directory Entries** Name: Air Conditioning Wright Favell Ltd Location: Winston Avenue, Croft, Leicester, LE9 3GQ Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	855	-	451732 295857
59	**Contemporary Trade Directory Entries** Name: Total Butler Location: Oil Storage Depot, Winston Avenue, Croft, LE9 3GQ Classification: Oil Fuel Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	871	-	451728 295834
60	**Contemporary Trade Directory Entries** Name: Reliable Cleaners Location: 10, Holliers Way, Croft, Leicester, LE9 3ER Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	953	-	451333 295601

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**Contemporary Trade Directory Entries** Name: Croft Damp-Proofing Location: 27, Kendalls Avenue, Croft, Leicester, LE9 3GW Classification: Woodworm Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	965	-	451370 295594
61	**Contemporary Trade Directory Entries** Name: Browns Machine Services Ltd Location: Main Street, Huncote, Leicester, Leicestershire, LE9 3AU Classification: Woodworking Machinery **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	971	-	451660 297417
61	**Contemporary Trade Directory Entries** Name: M S G Autogas Location: 9, Main Street, Huncote, Leicester, Leicestershire, LE9 3AU Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	971	-	451660 297417
62	**Fuel Station Entries** Name: Main Street Lpg Garage Location: 9, Main Street, Huncote, Leicester, LE9 3AU Brand: Unbranded Premises Type: Petrol Station **Status: Open** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	968	-	451658 297415
63	**Points of Interest - Commercial Services** Name: Croft Garage Leicester Ltd Location: Gemini House, Winston Avenue, Croft, Leicester, LE9 3GQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	831	7	451540 295778
64	**Points of Interest - Commercial Services** Name: Croft Damp-proofing Location: 27 Kendalls Avenue, Croft, Leicester, LE9 3GW Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A8SE (S)	959	7	451368 295599
64	**Points of Interest - Commercial Services** Name: Croft Damp-Proofing Location: 27 Kendalls Avenue, Croft, Leicester, LE9 3GW Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A8SE (S)	965	7	451370 295594
65	**Points of Interest - Commercial Services** Name: Main Street Garage Location: 9 Main Street, Huncote, Leicester, LE9 3AU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	971	7	451660 297417
65	**Points of Interest - Commercial Services** Name: 2 Wheel Service Location: Main Street, Huncote, Leicester, LE9 3AU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	972	7	451661 297417
66	**Points of Interest - Manufacturing and Production** Name: Croft Quarry (Granite) Location: LE9 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	243	7	451140 296322
67	**Points of Interest - Manufacturing and Production** Name: Huncote Quarry Location: LE9 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A18SW (N)	420	7	451168 296963
68	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	434	7	451451 296176

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SW (SE)	492	7	451626 296258
69	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	497	7	451636 296264
70	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	509	7	451582 296182
70	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	523	7	451553 296138
70	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	528	7	451610 296183
71	**Points of Interest - Manufacturing and Production** Name: Aggregate Industries Ltd Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A8NW (S)	561	7	451031 296023
71	**Points of Interest - Manufacturing and Production** Name: Aggregate Industries Ltd Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A8NW (S)	561	7	451031 296023
71	**Points of Interest - Manufacturing and Production** Name: Aggregate Industries Location: Greystones, Huncote Road, Croft, Leicester, LE9 3GT Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A8NW (S)	567	7	451104 295995
72	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	613	7	451537 296018
72	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	614	7	451536 296017
72	**Points of Interest - Manufacturing and Production** Name: Bardon Aggregates Location: Croft Quarry, Coventry Road, Croft, Leicester, LE9 3GP Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A9NW (SE)	676	7	451576 295969
73	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	668	7	451653 296033

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	795	7	451758 295955
74	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	796	7	451759 295955
75	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	817	7	451518 297311
75	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	883	7	451583 297356
76	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	822	7	451854 296015
76	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	823	7	451854 296013
77	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	830	7	451537 295777
77	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	831	7	451536 295776
77	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	834	7	451496 295758
77	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	834	7	451499 295759
78	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	837	7	451609 295803
78	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	837	7	451611 295804

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	837	7	451629 295813
78	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (SE)	838	7	451559 295778
78	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	840	7	451629 295810
78	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (SE)	841	7	451559 295775
79	**Points of Interest - Manufacturing and Production** Name: Works Location: LE9 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	853	7	451740 295866
79	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	854	7	451740 295864
79	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	873	7	451756 295853
80	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	955	7	450280 296442
81	**Points of Interest - Public Infrastructure** Name: Cemetery Location: LE9 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	615	7	450885 296038
81	**Points of Interest - Public Infrastructure** Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	685	7	450875 295961
81	**Points of Interest - Public Infrastructure** Name: Cemetery Location: LE9 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	685	7	450874 295962
82	**Points of Interest - Public Infrastructure** Name: Weir Location: LE9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	625	7	451805 296307

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	**Points of Interest - Public Infrastructure** Name: Weir Location: LE9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	637	7	451799 296265
83	**Points of Interest - Public Infrastructure** Name: Sluice Location: LE9 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	846	7	451422 297371
84	**Points of Interest - Public Infrastructure** Name: Main Street Lpg Garage Location: 9 Main Street, Huncote, Leicester, LE9 3AU Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A19NW (NE)	968	7	451658 297415
85	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	653	7	451166 295898

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Surface Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A13NE (NE)	0	8	451229 296548
87	**Sites of Special Scientific Interest** Name: Croft And Huncote Quarry Multiple Areas: N Total Area (m2): 352514.42 Source: Natural England Reference: 1003745 Designation Details: Geological Conservation Review Designation Date: 1st May 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 1st May 1986 Date Type: Notified	A13NE (NE)	0	9	451229 296548
88	**Sites of Special Scientific Interest** Name: Croft Hill Multiple Areas: N Total Area (m2): 20434.4 Source: Natural England Reference: 2000077 Designation Details: Site Of Special Scientific Interest Designation Date: 23rd March 1994 Date Type: Notified	A13NW (NW)	207	9	451045 296643
89	**Sites of Special Scientific Interest** Name: Croft Pasture Multiple Areas: N Total Area (m2): 61672.79 Source: Natural England Reference: 1003760 Designation Details: Site Of Special Scientific Interest Designation Date: 1st July 1983 Date Type: Notified	A8NW (S)	631	9	451110 295928

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Harborough District Council - Environmental Health Department	April 2014	Annual Rolling Update
Blaby District Council - Environmental Health Department	December 2015	Annual Rolling Update
Hinckley And Bosworth Borough Council - Environmental Health Department	October 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Midlands Region	October 2016	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Midlands Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Midlands Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Midlands Region	October 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Blaby District Council - Environmental Health Department	December 2015	Annual Rolling Update
Hinckley And Bosworth Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Blaby District Council - Environmental Health Department	December 2015	Annual Rolling Update
North West Leicestershire District Council - Environmental Health Department	July 2014	Annual Rolling Update
Hinckley And Bosworth Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Blaby District Council - Environmental Health Department	December 2015	Annual Rolling Update
Hinckley And Bosworth Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Midlands Region	December 1999	Not Applicable
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Midlands Region	July 2015	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Midlands Region	March 2013	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - Midlands Region - East Area	October 2016	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2016	Quarterly
Water Abstractions		
Environment Agency - Midlands Region	October 2016	Quarterly
Water Industry Act Referrals		
Environment Agency - Midlands Region	October 2016	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable

Agency & Hydrological	Version	Update Cycle
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	October 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2016	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2016	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	November 2016	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	November 2016	Quarterly
Flood Defences Environment Agency - Head Office	November 2016	Quarterly
Detailed River Network Lines Environment Agency - Head Office	September 2014	Annually
Detailed River Network Offline Drainage Environment Agency - Head Office	March 2012	Annually
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	January 2017	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Midlands Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Midlands Region - East Area	August 2016	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	August 2016	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Midlands Region - East Area	October 2016	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2016	Quarterly
Local Authority Landfill Coverage		
Blaby District Council - Environmental Health Department	May 2000	Not Applicable
Harborough District Council - Environmental Health Department	May 2000	Not Applicable
Hinckley And Bosworth Borough Council - Environmental Health Department	May 2000	Not Applicable
Leicestershire County Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Blaby District Council - Environmental Health Department	May 2000	Not Applicable
Harborough District Council - Environmental Health Department	May 2000	Not Applicable
Hinckley And Bosworth Borough Council - Environmental Health Department	May 2000	Not Applicable
Leicestershire County Council	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	July 2016	Bi-Annually
Explosive Sites		
Health and Safety Executive	September 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Blaby District Council - Planning Department	February 2016	Annual Rolling Update
Harborough District Council	February 2016	Annual Rolling Update
Hinckley And Bosworth Borough Council	February 2016	Annual Rolling Update
Leicestershire County Council	February 2016	Annual Rolling Update
Planning Hazardous Substance Consents		
Blaby District Council - Planning Department	February 2016	Annual Rolling Update
Harborough District Council	February 2016	Annual Rolling Update
Hinckley And Bosworth Borough Council	February 2016	Annual Rolling Update
Leicestershire County Council	February 2016	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2016	Bi-Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	As notified
Brine Compensation Area Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	November 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	September 2016	Quarterly
Points of Interest - Education and Health PointX	September 2016	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2016	Quarterly
Points of Interest - Public Infrastructure PointX	September 2016	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2016	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	August 2016	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	January 2017	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	September 2016	Bi-Annually
Marine Nature Reserves Natural England	January 2017	Bi-Annually
National Nature Reserves Natural England	September 2016	Bi-Annually
National Parks Natural England	August 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	September 2016	Bi-Annually
Special Protection Areas Natural England	September 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

Data Suppliers

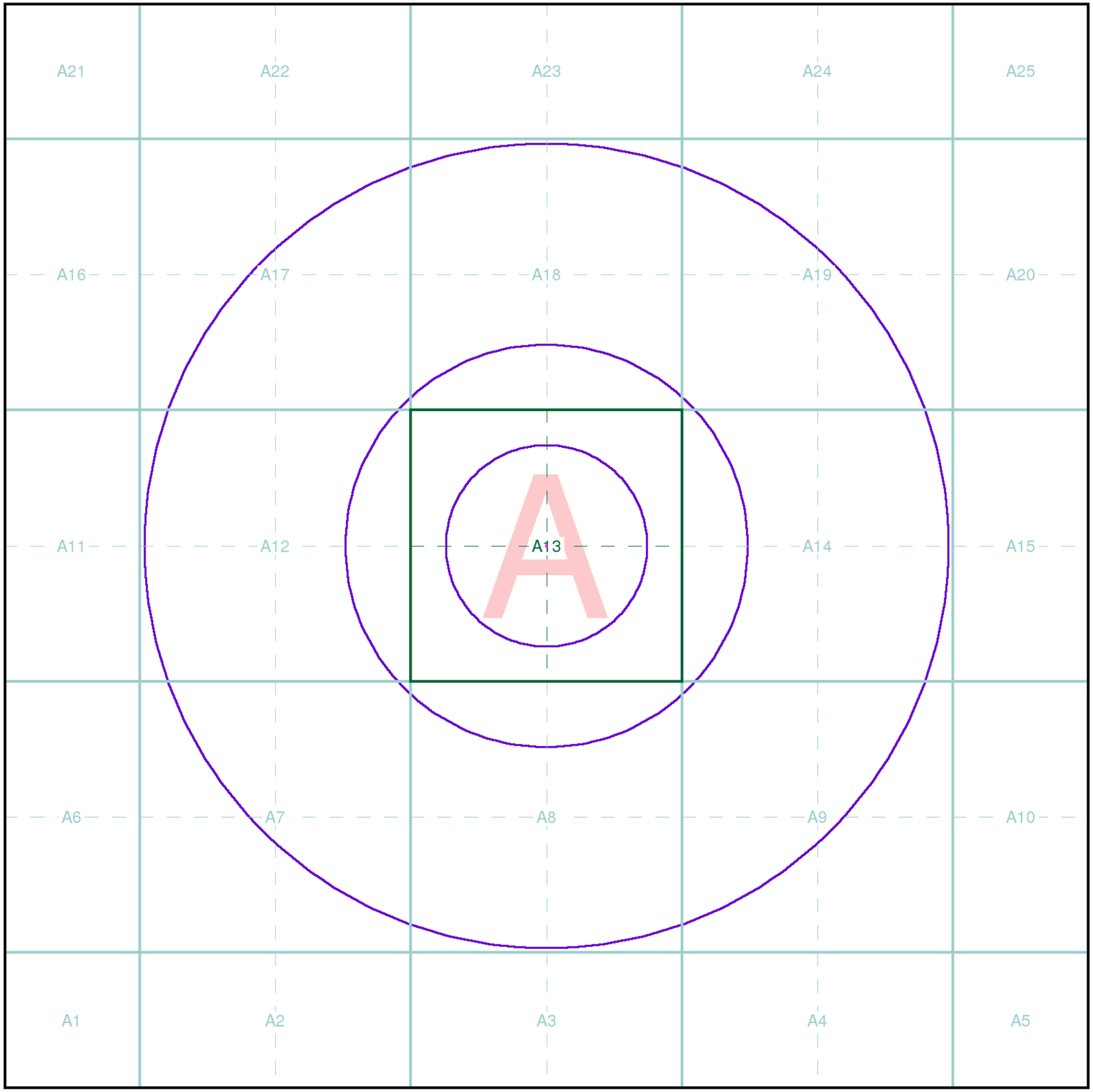
A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
2	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
3	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	**North West Leicestershire District Council - Environmental Health Department** Council Offices, Coalville, Leicestershire, LE67 3FJ	Telephone: 01530 454545 Fax: 01530 510290 Website: www.nwleics.gov.uk
5	**Blaby District Council - Environmental Health Department** Council Offices, Desford Road, Narborough, Leicester, Leicestershire, LE9 5EP	Telephone: 0116 2750555 Fax: 0116 275368 Website: www.blaby.gov.uk
6	**Leicestershire County Council** County Hall, Glenfield, Leicestershire, LE3 8RH	Website: www.leics.gov.uk
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
8	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
9	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
10	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Envirocheck reports are compiled from 136 different sources of data.

Prepared For

Aggregate Industries UK Limited
Bardon Hall
Copt Oak
Markfield
Leicestershire
9PJ

Client Details

Miss K Mair, ESI Ltd, New Zealand House, 160 Abbey Foregate, Shrewsbury, Shropshire, SY2 6FD

Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

Landmark INFORMATION GROUP
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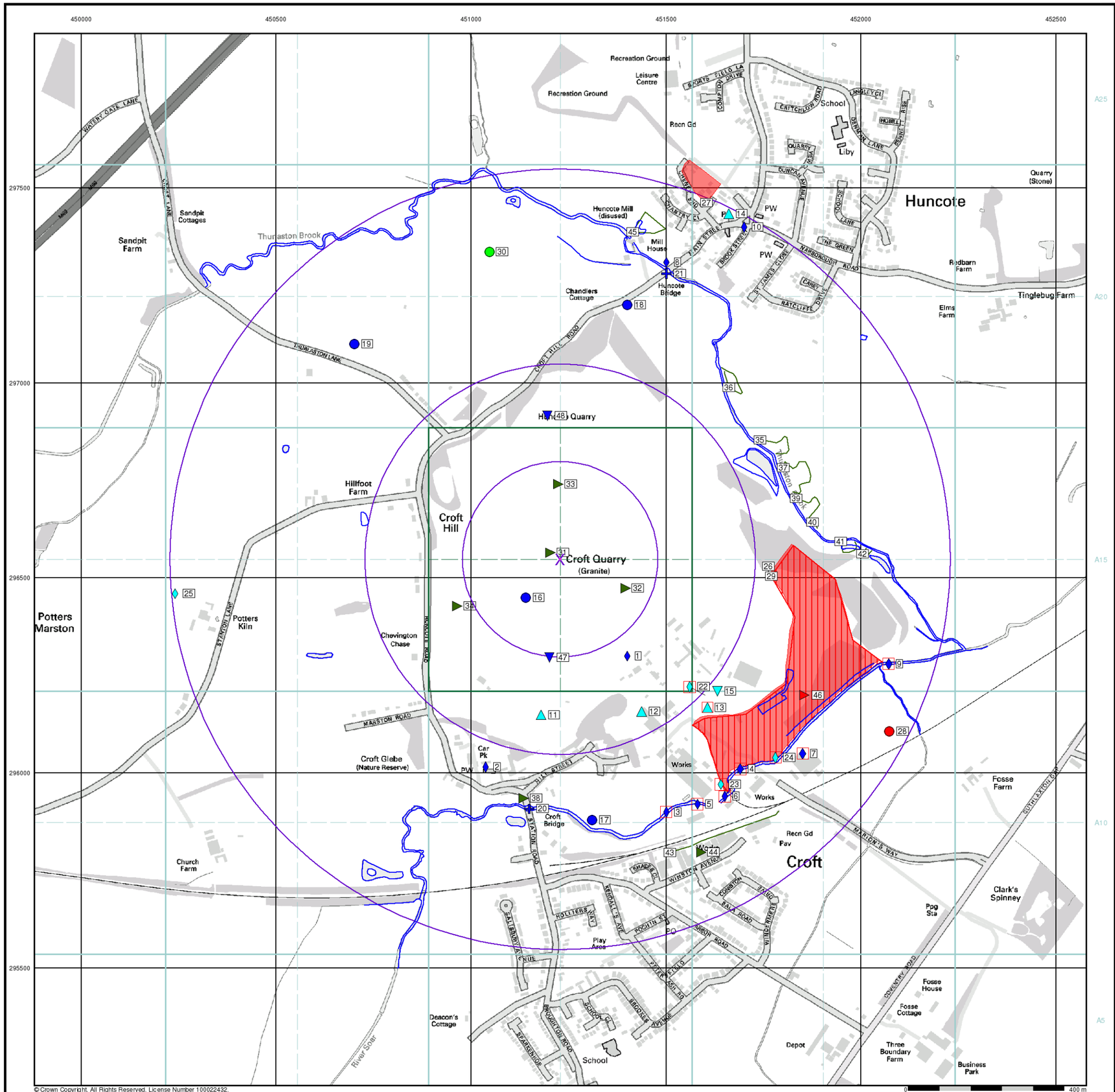
Web: www.envirocheck.co.uk



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

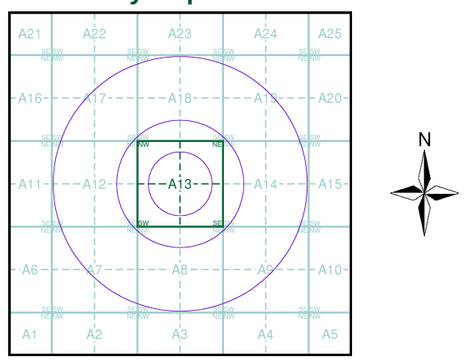
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
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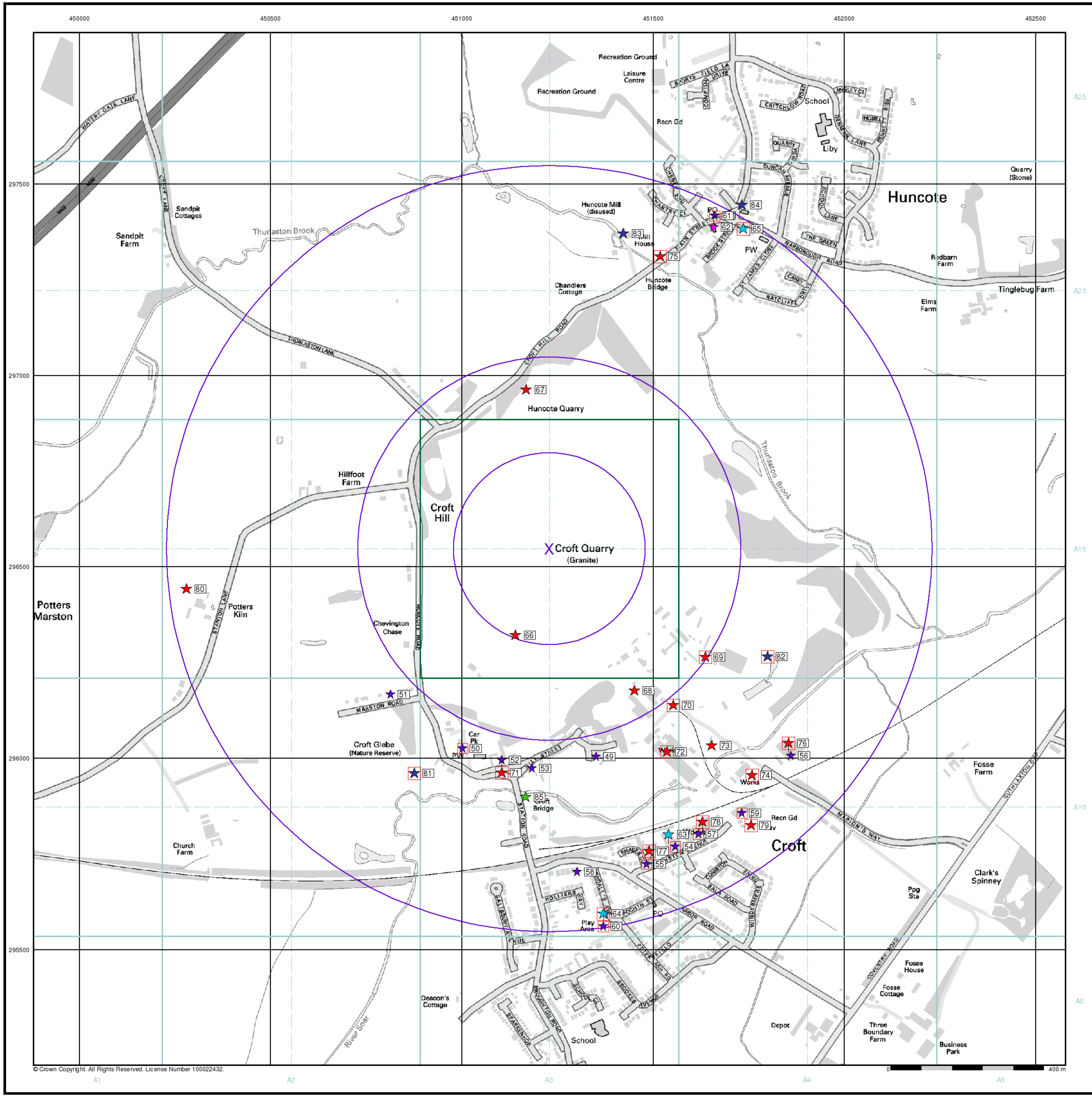
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Industrial Land Use Map

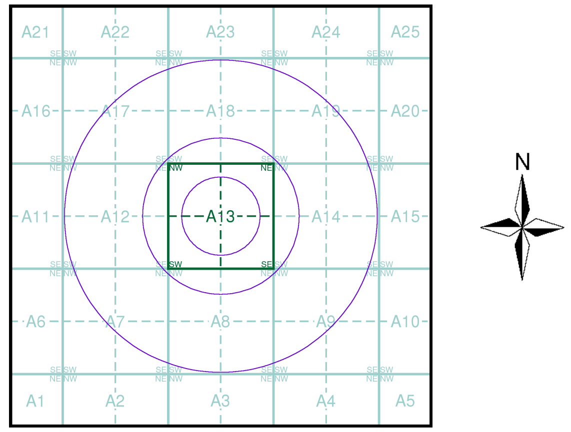
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



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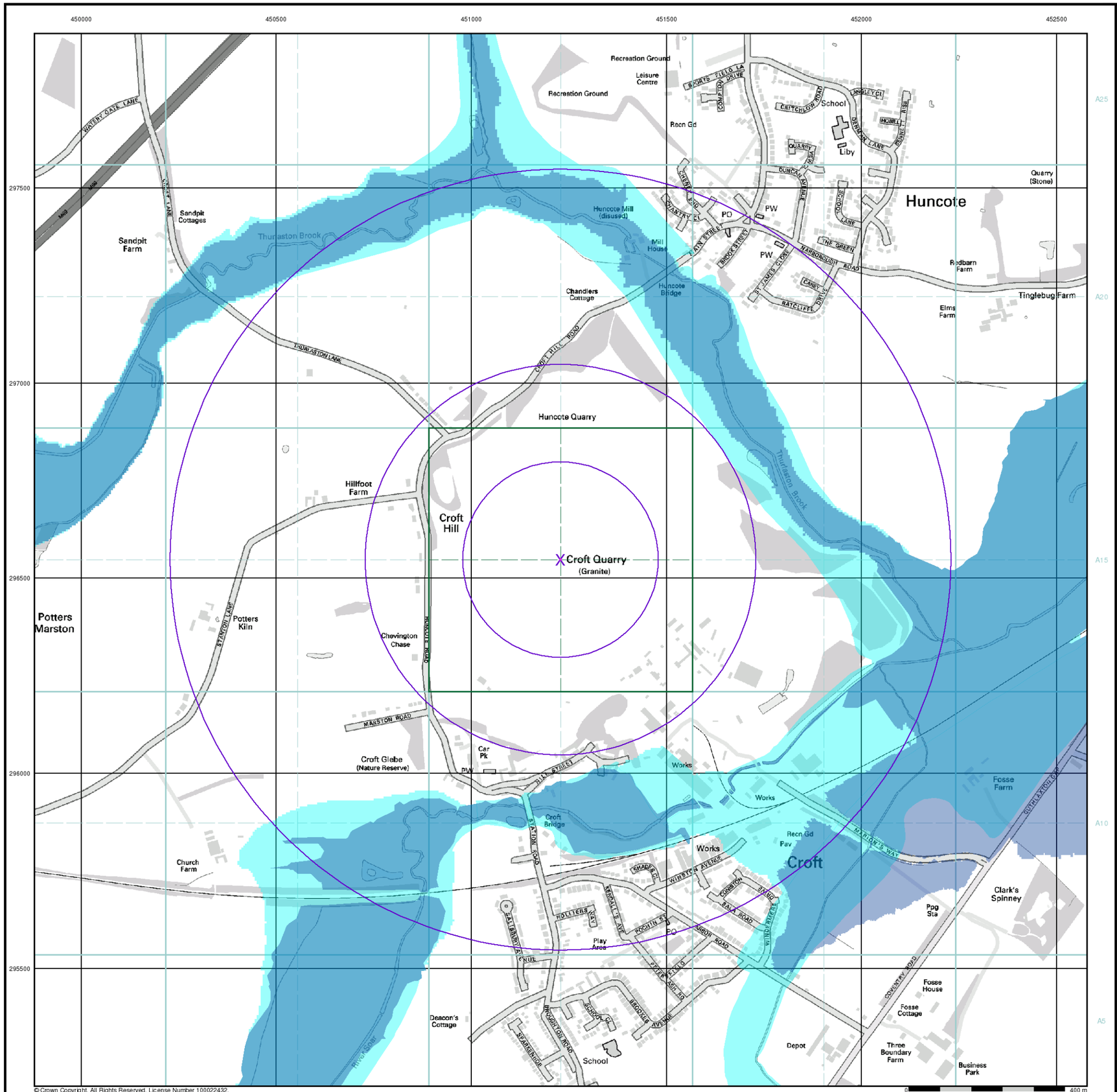


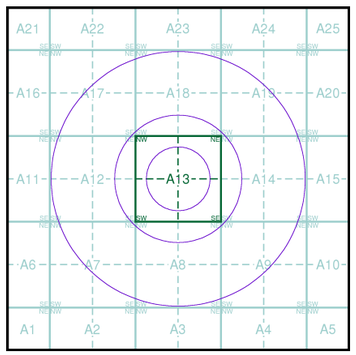
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

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Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

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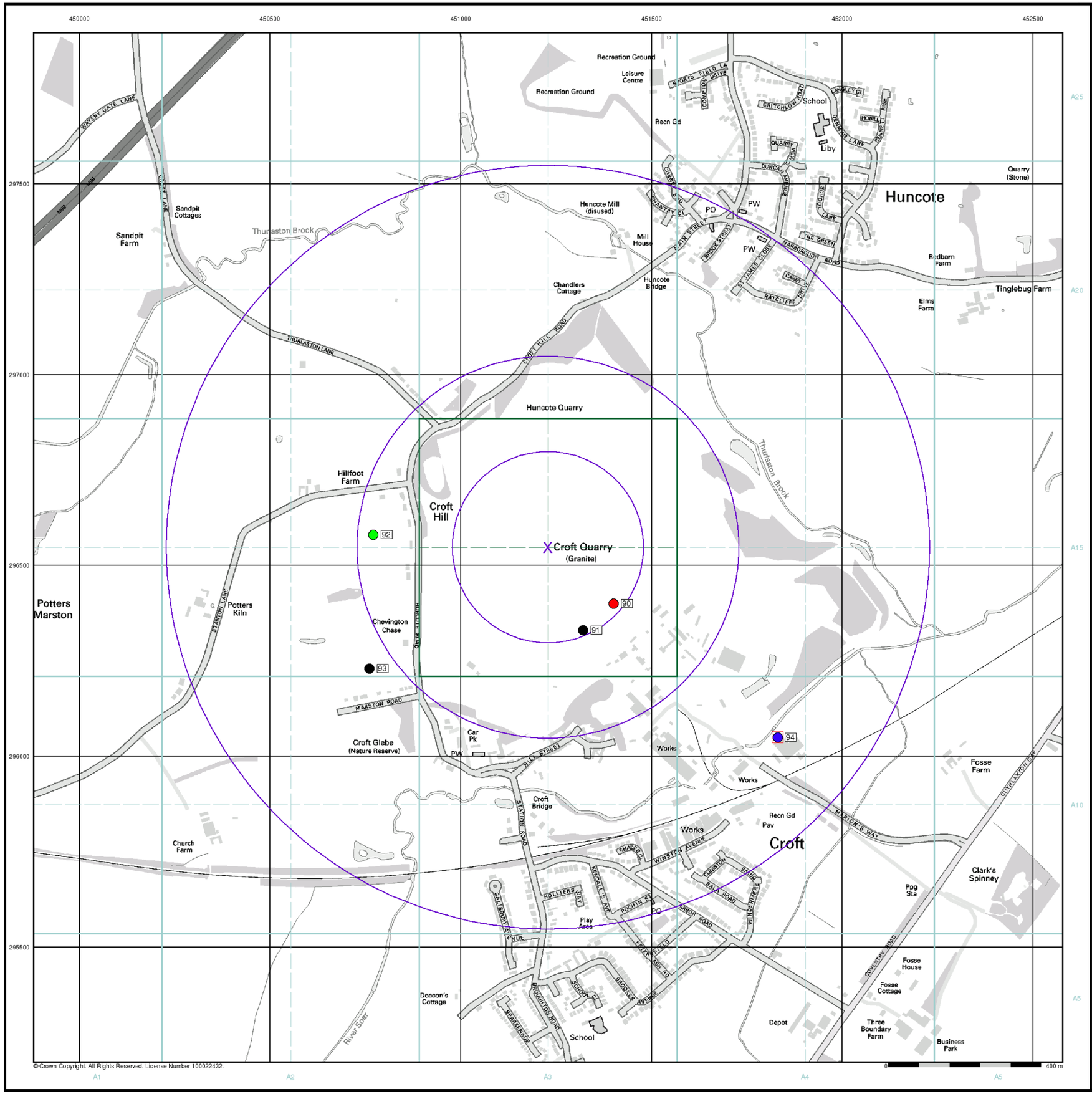


General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

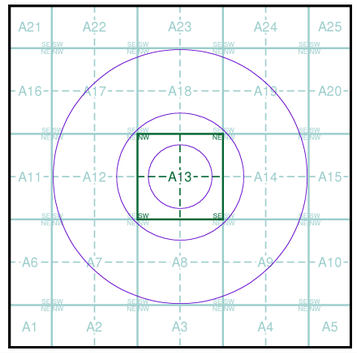
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
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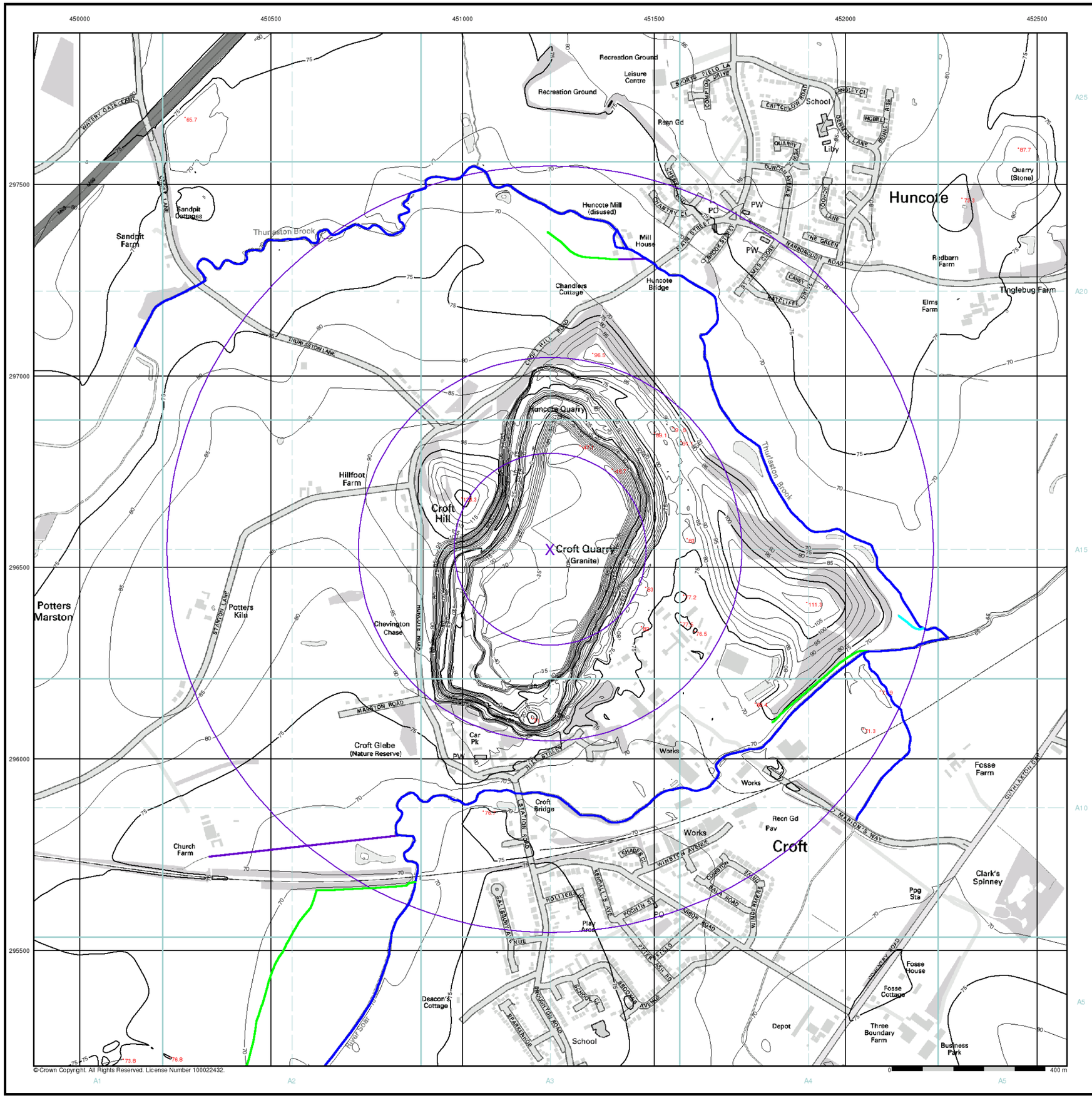
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

Contours (height in metres)

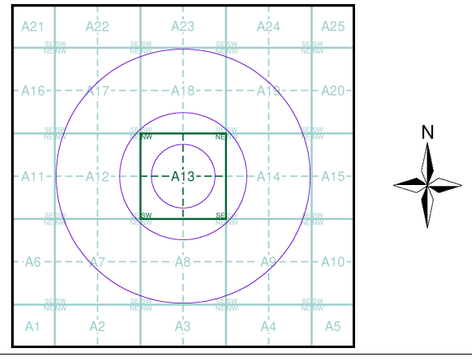
Standard Contour 105 100 95

Master Contour

Spot Height *167.3

- MLW Mean Low Water
- MHW Mean High Water

EA/NRW Detailed River Network Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

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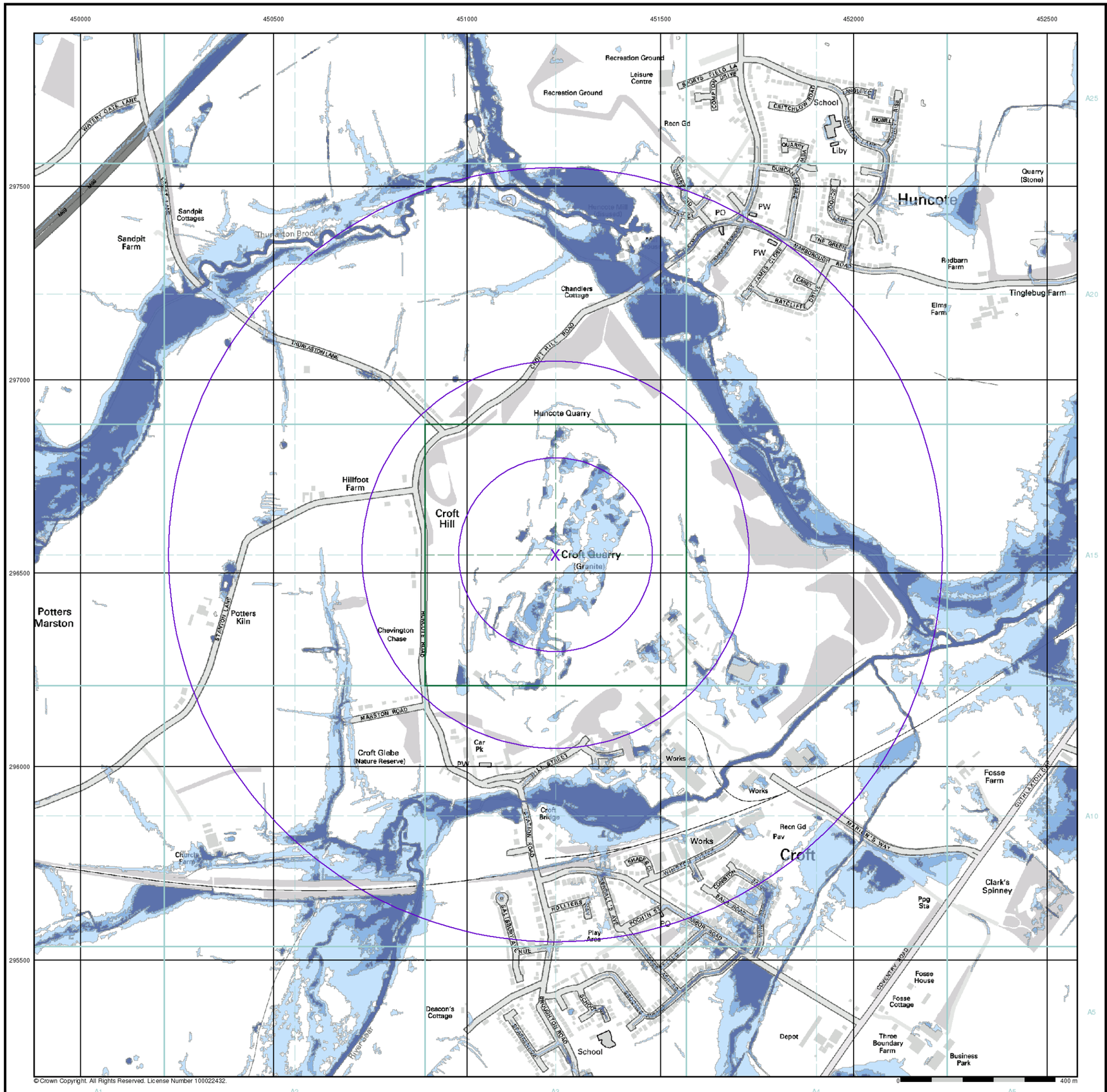

A1 A2 A3 A4 A5

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General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

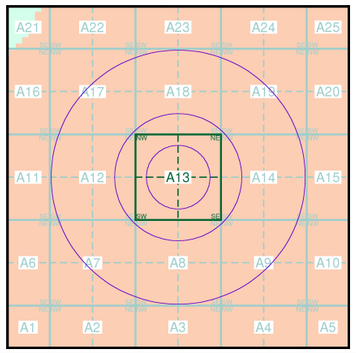
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

Landmark INFORMATION GROUP

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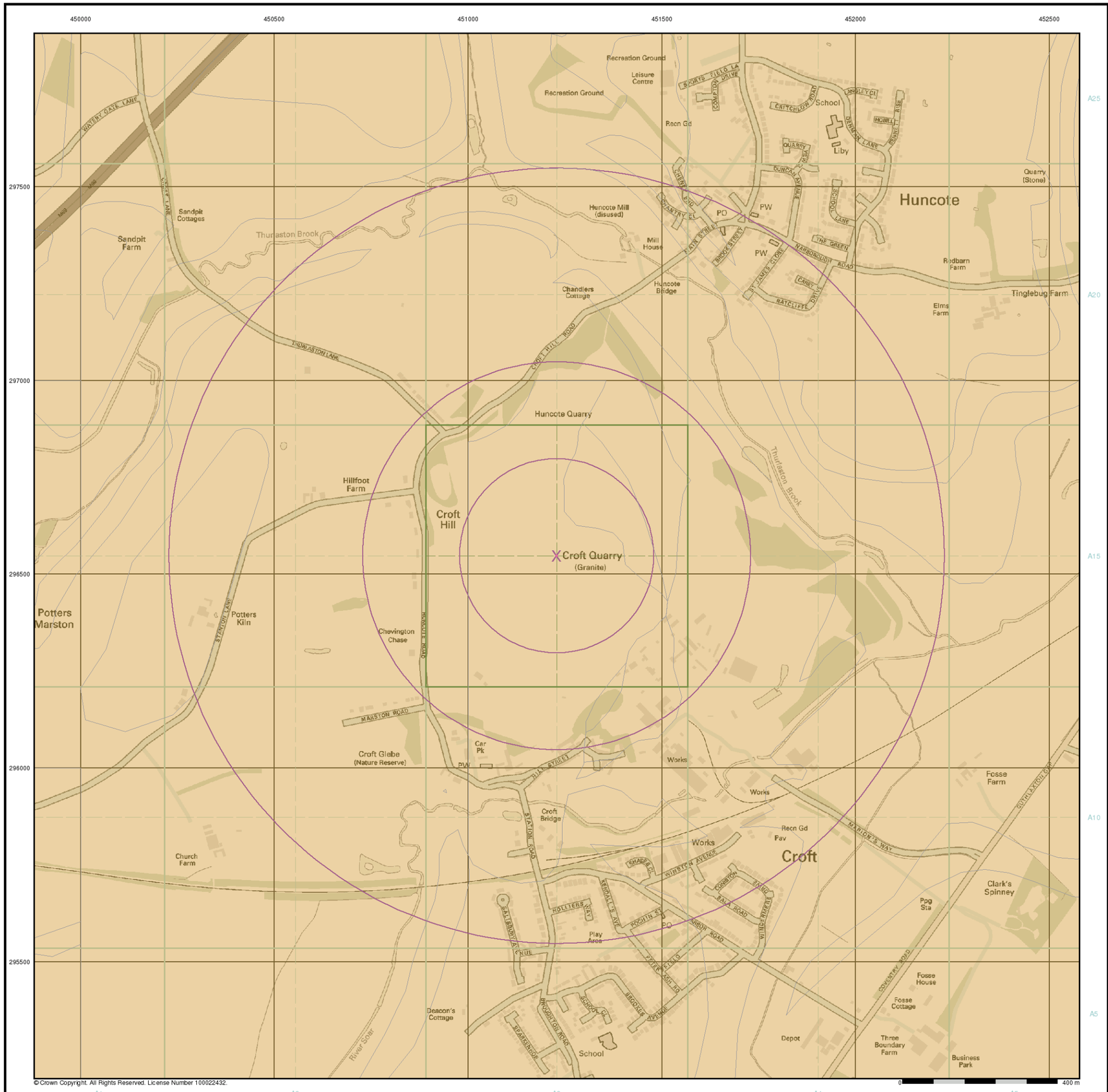

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General

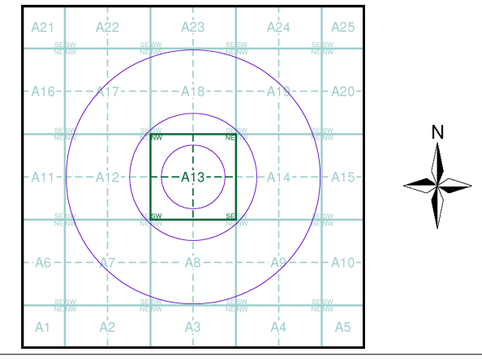
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
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Site Details

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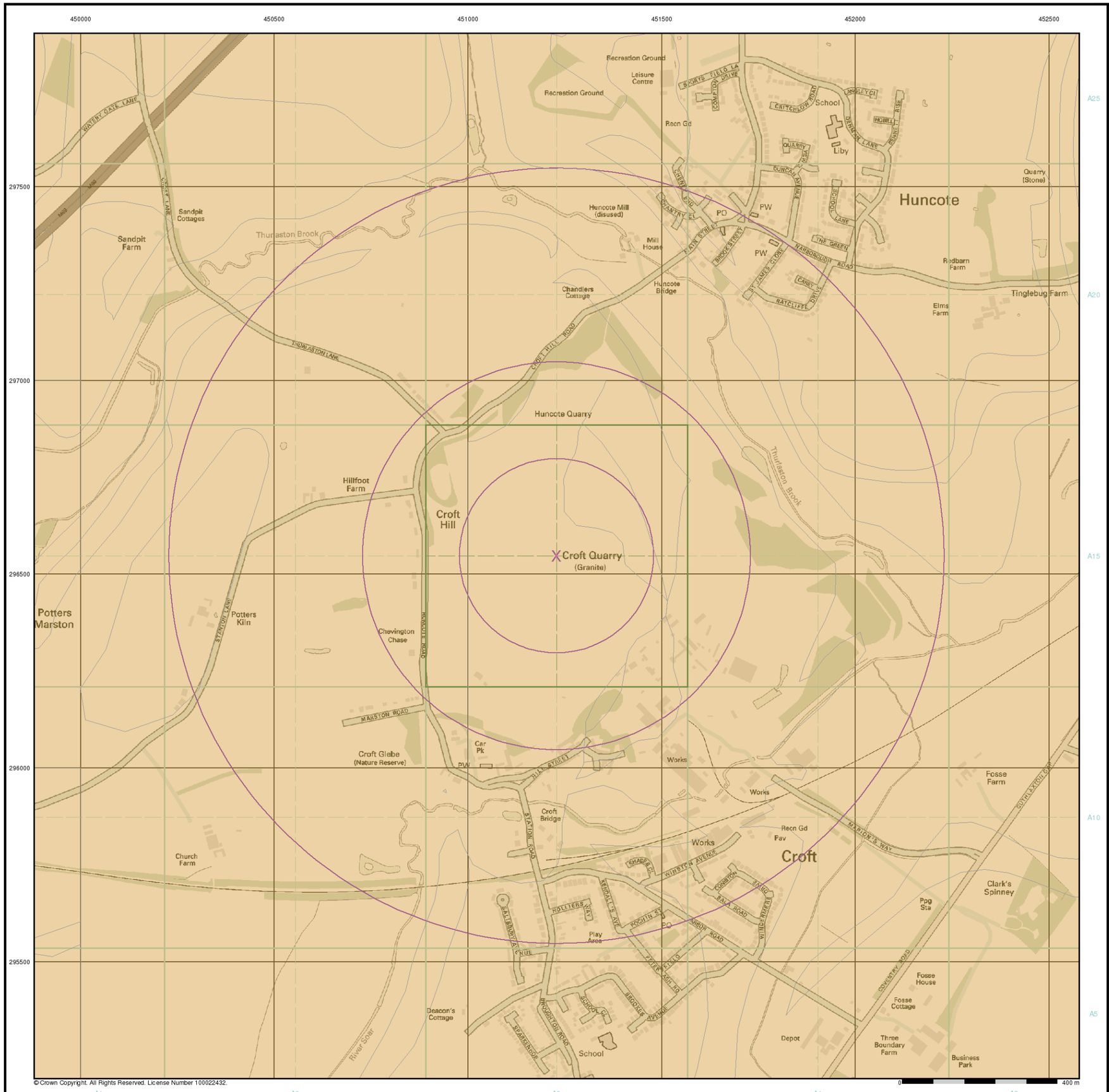


General

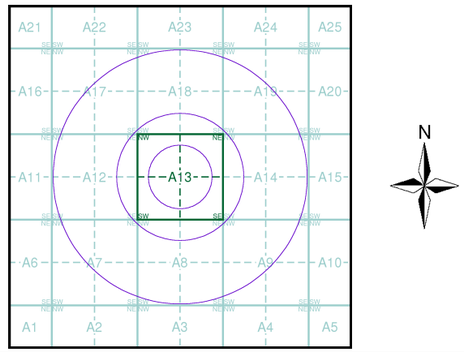
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

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Site Details

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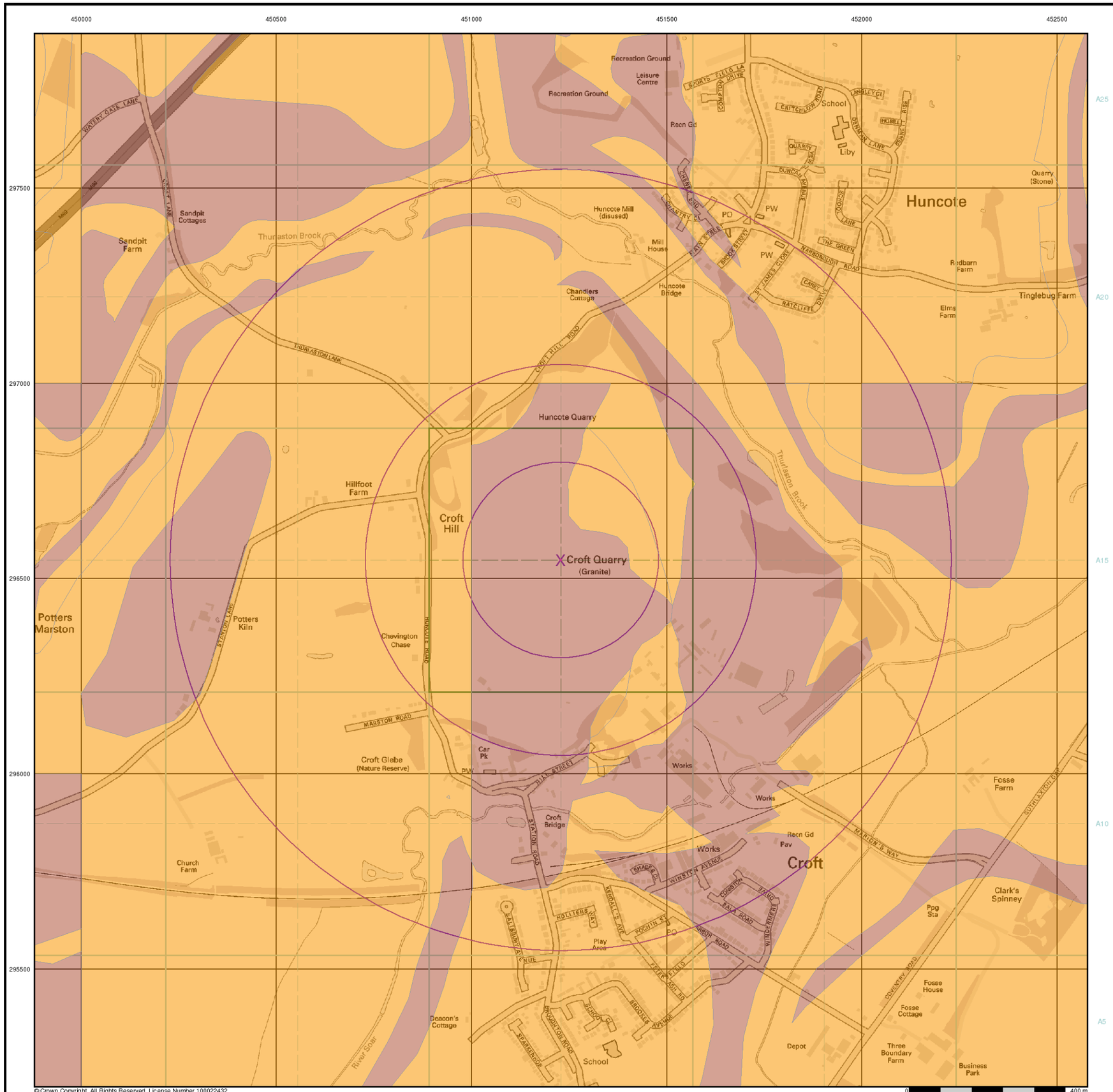

Applied Environmental Insight

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General

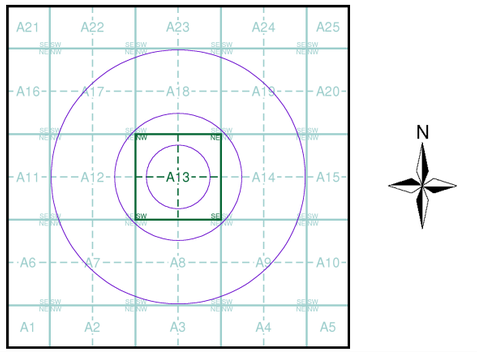
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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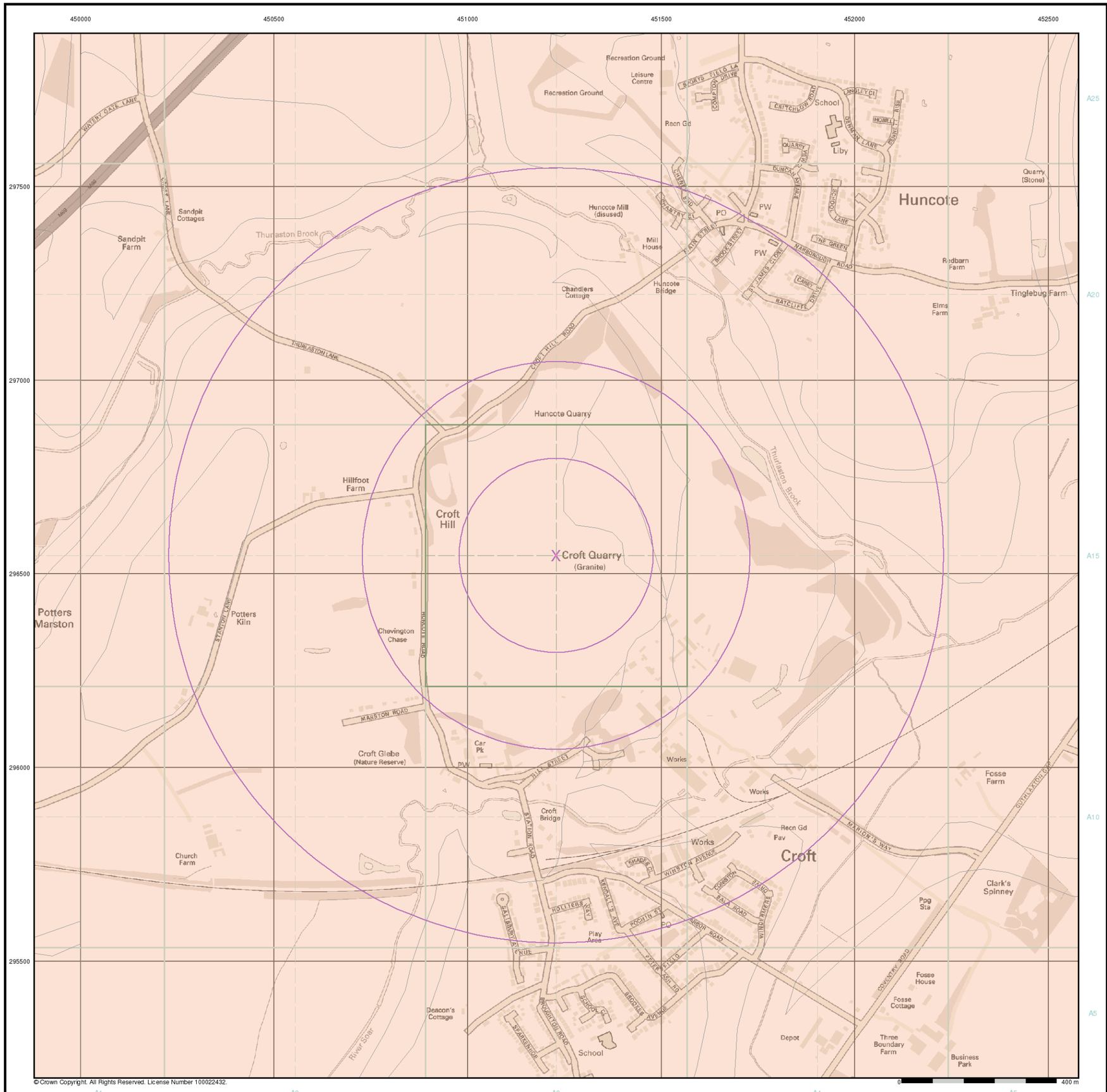


General

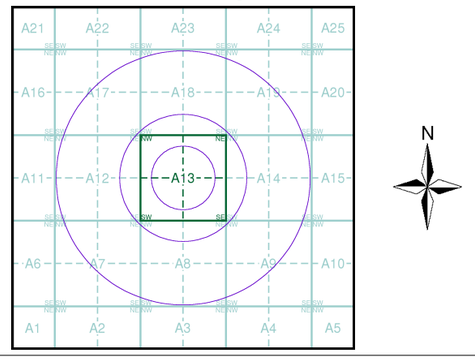
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

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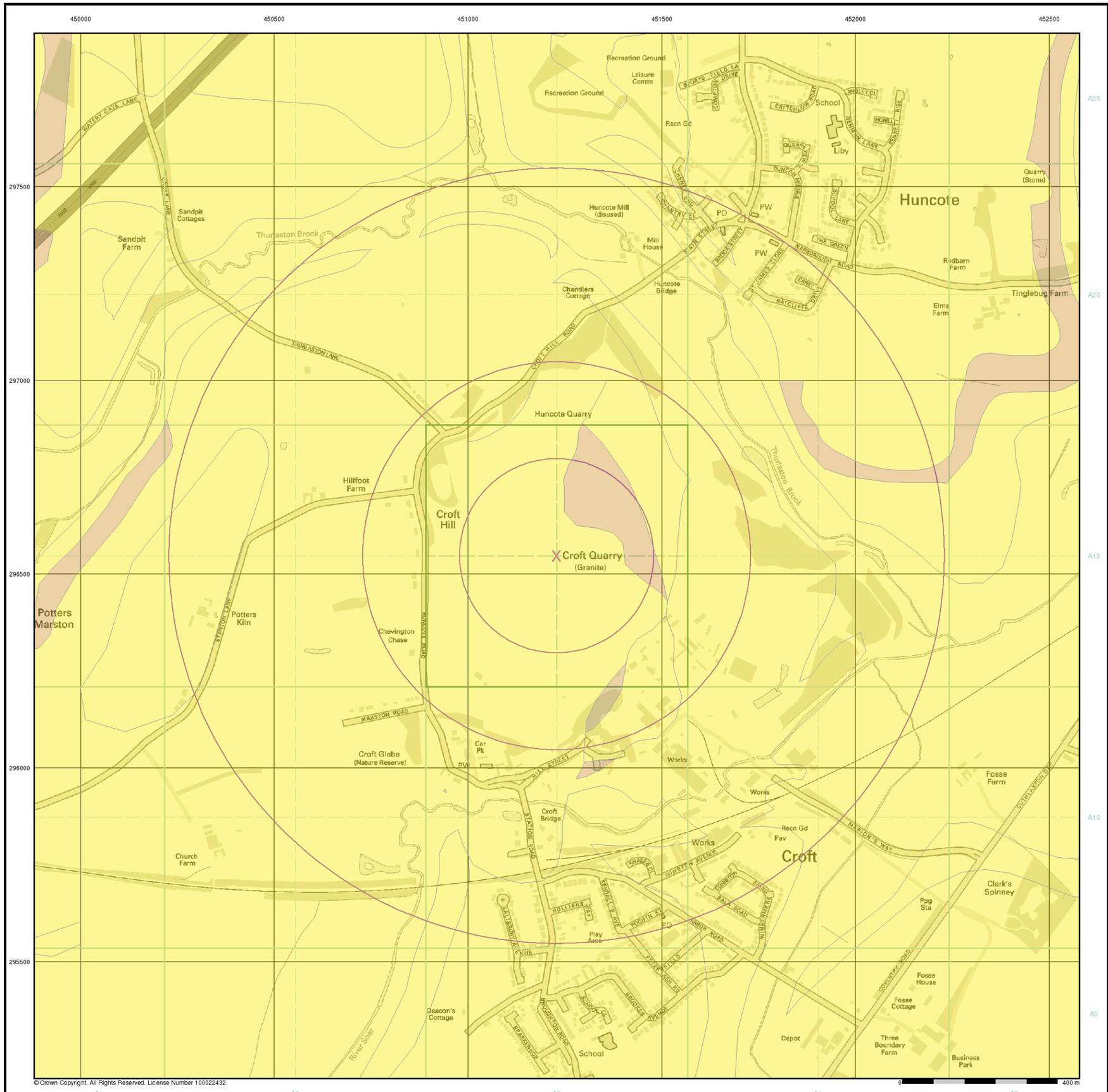

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General

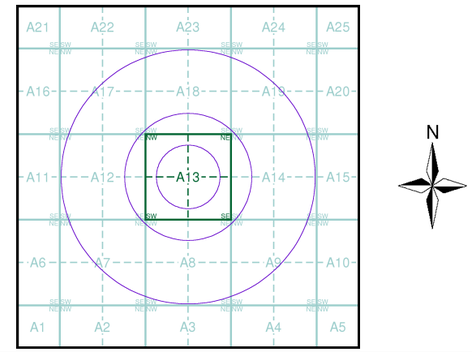
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

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Slice:	A
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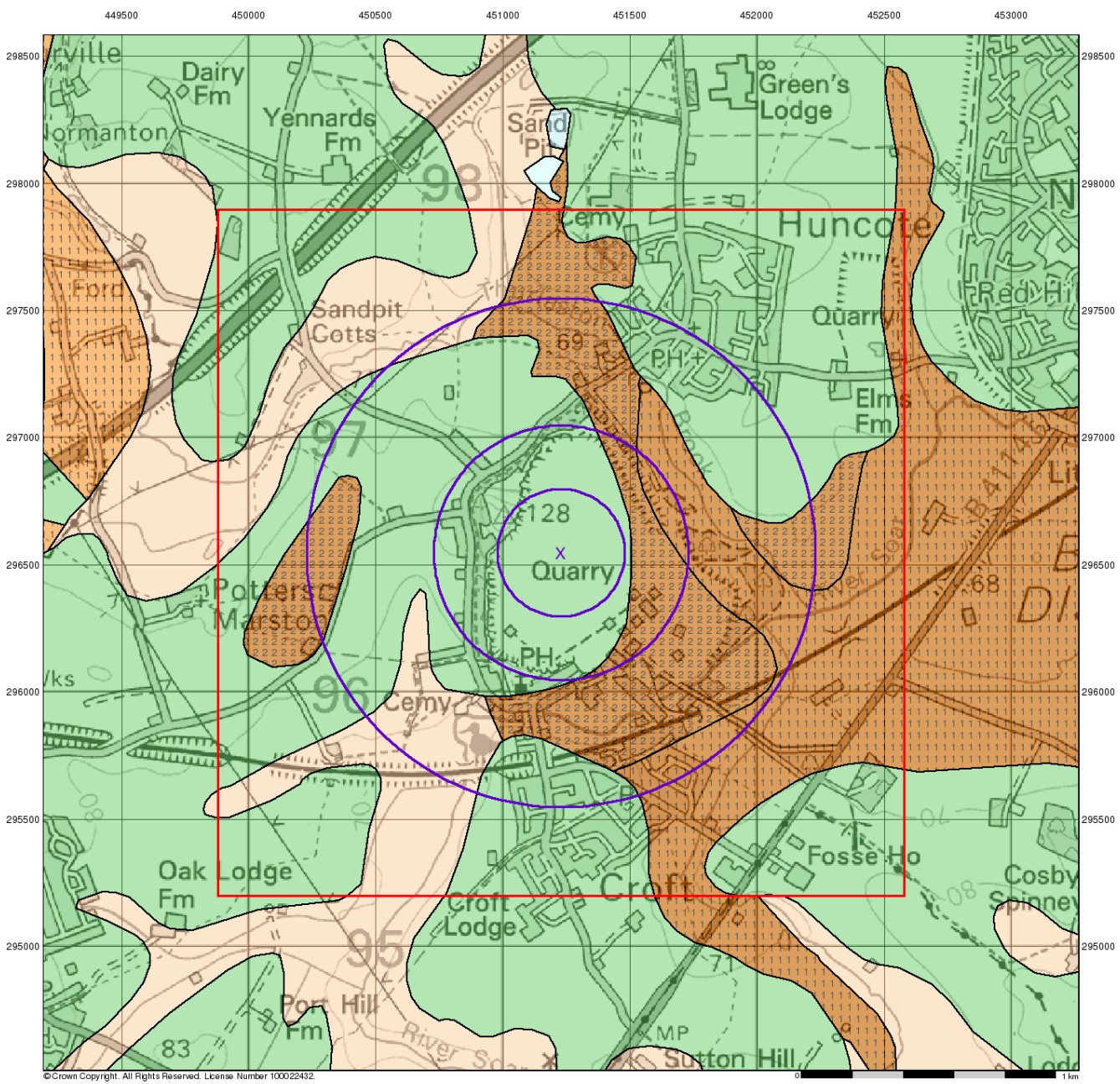

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Groundwater Vulnerability

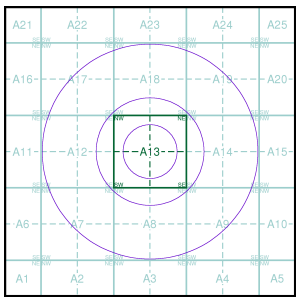
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A

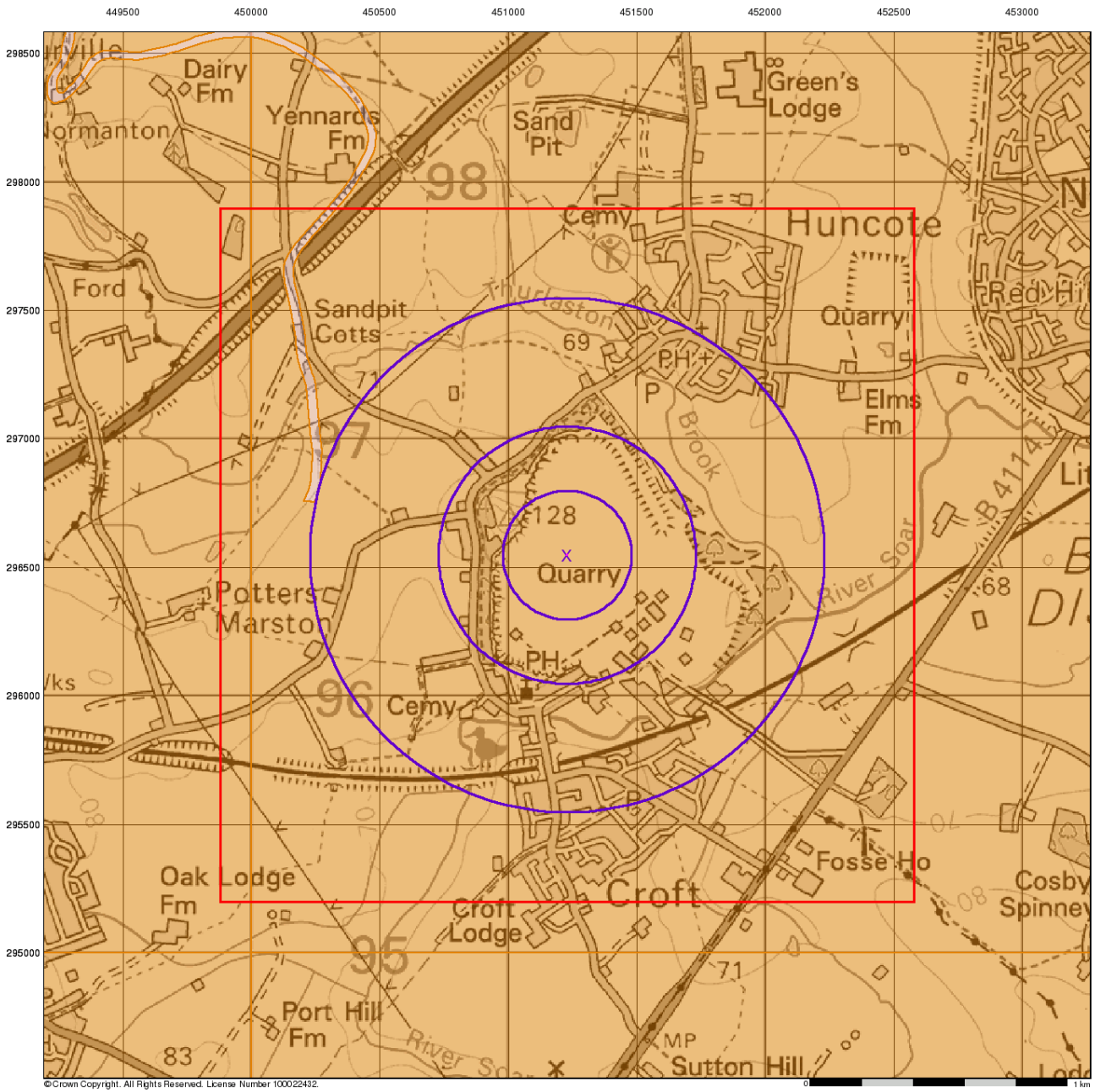


Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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Bedrock Aquifer Designation

General

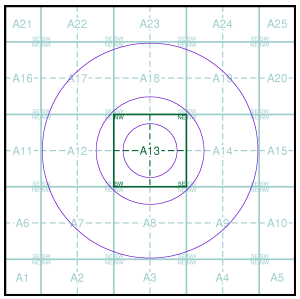
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



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Customer Ref:	65543
National Grid Reference:	451230, 296550
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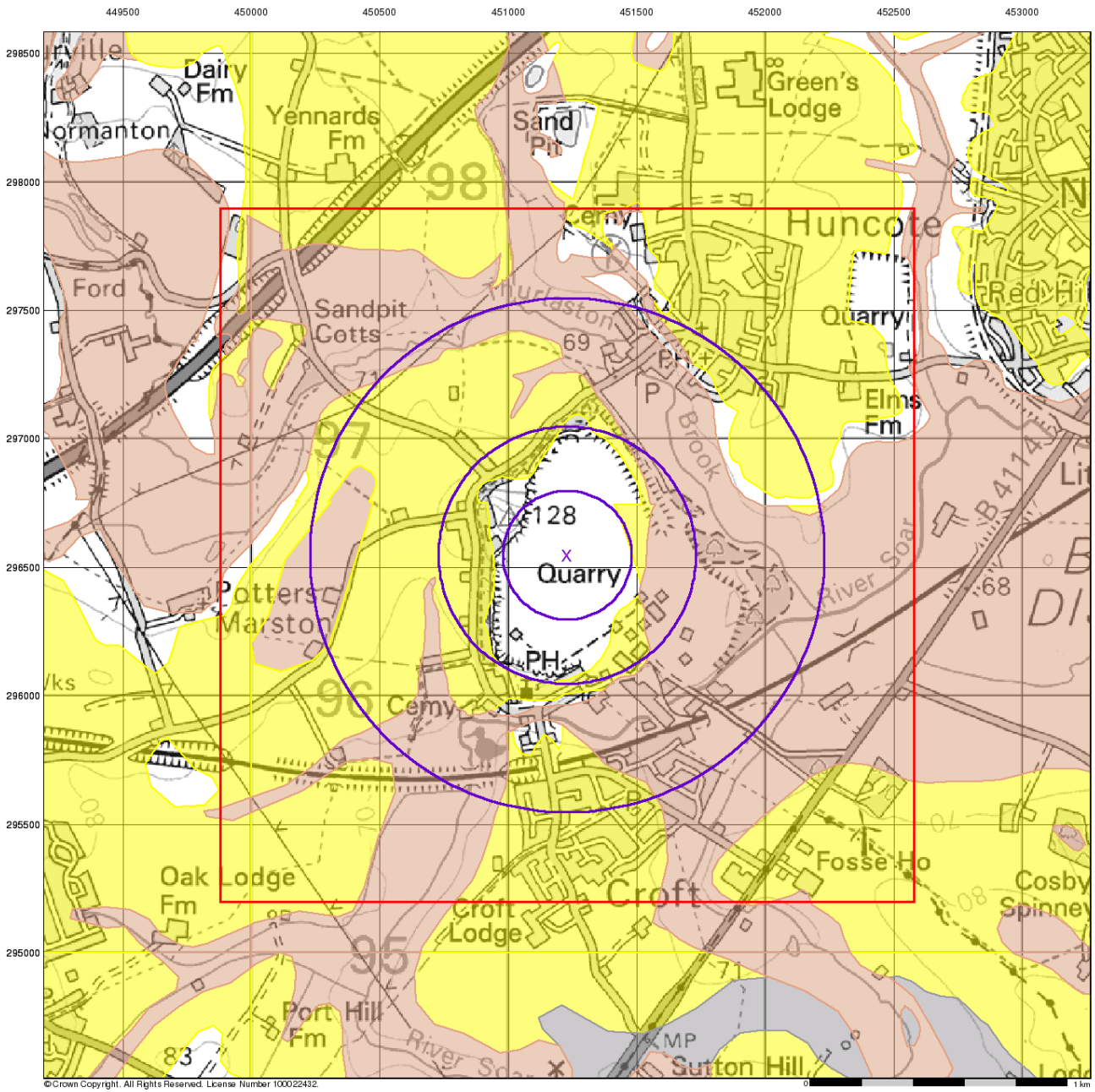
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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Superficial Aquifer Designation

General

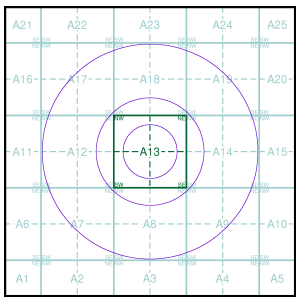
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

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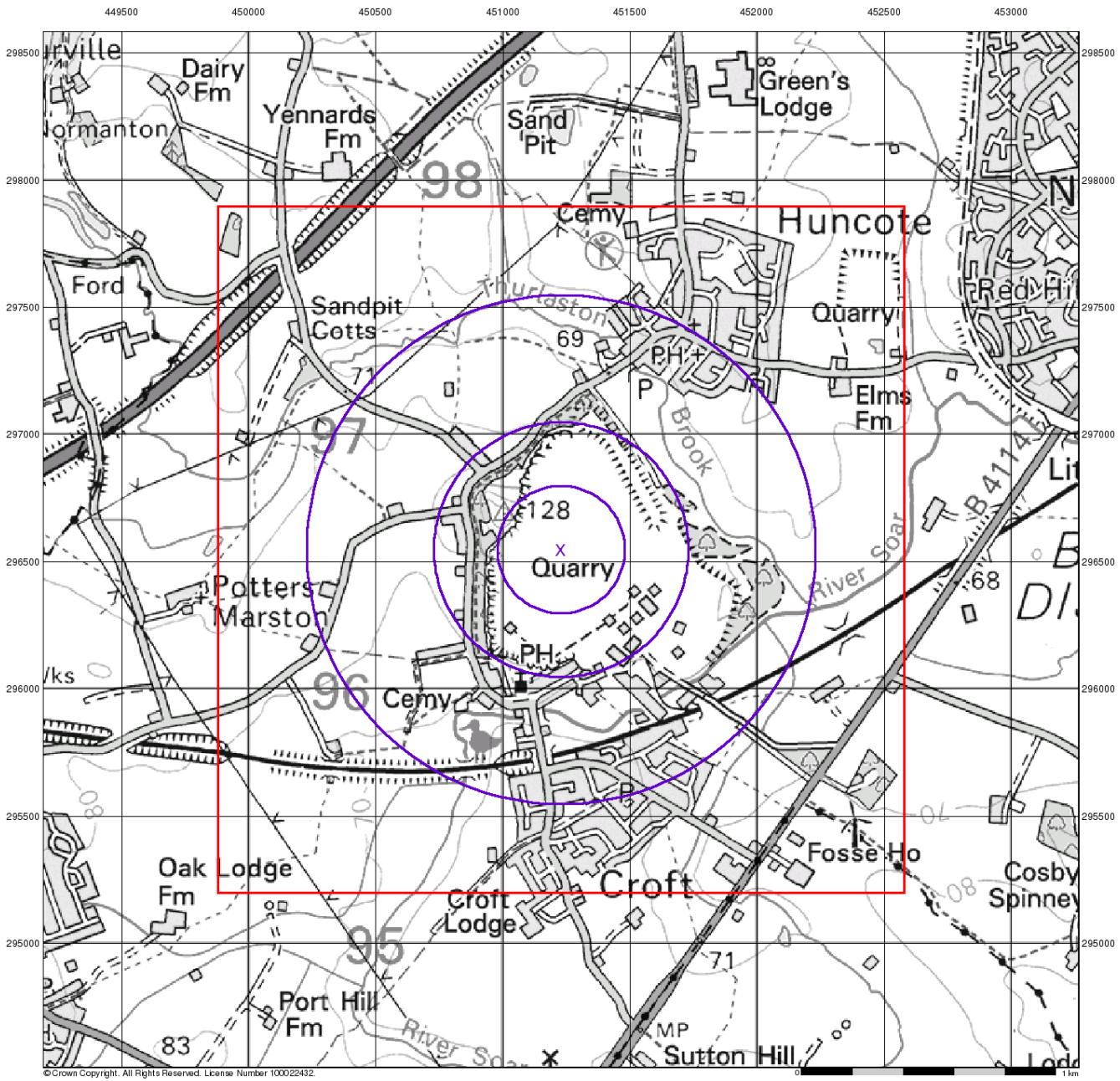
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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Source Protection Zones

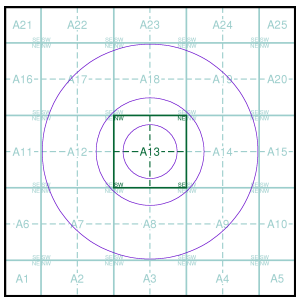
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



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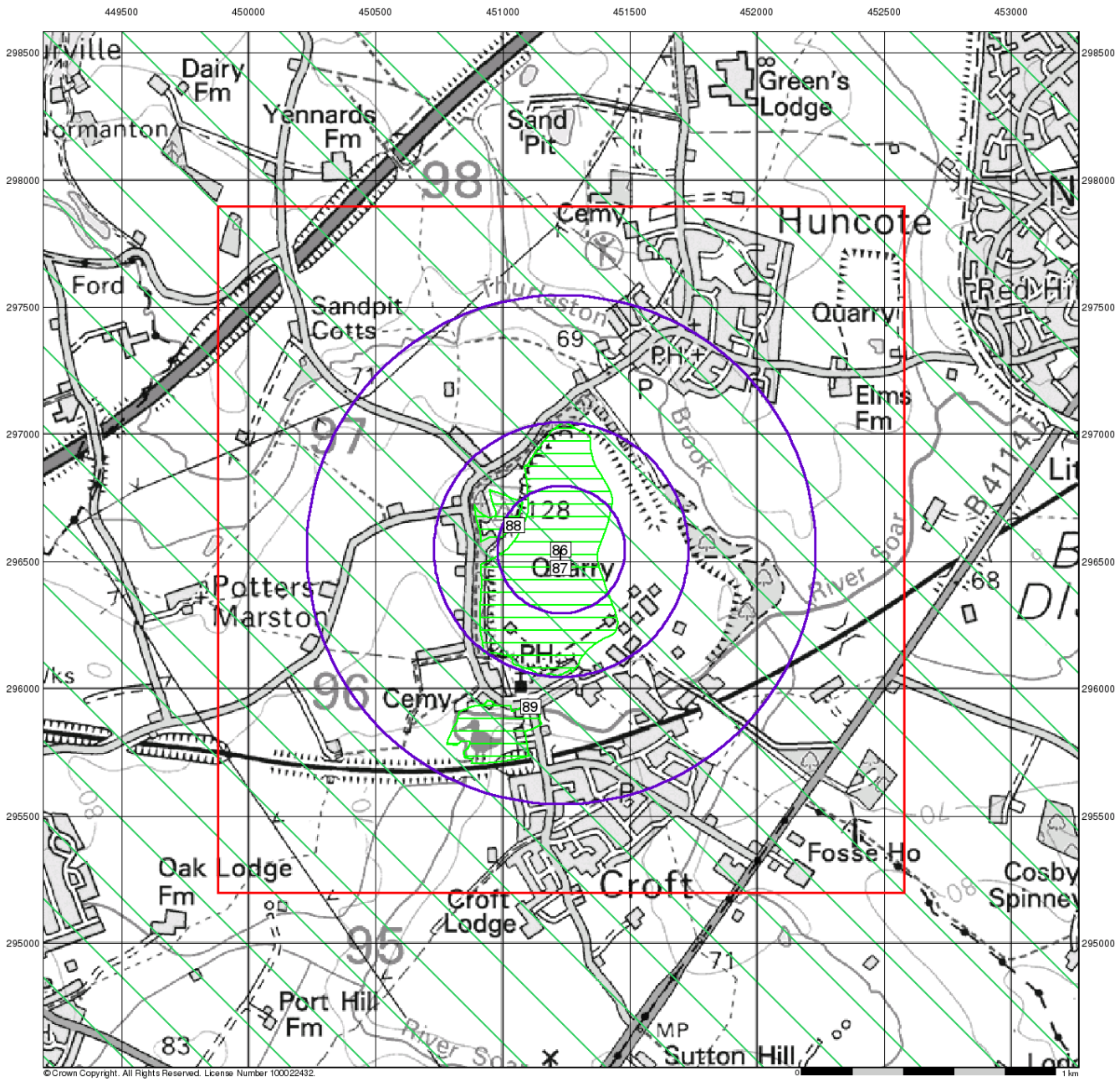
Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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Sensitive Land Uses

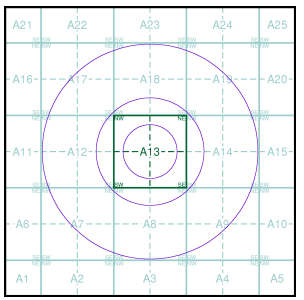
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



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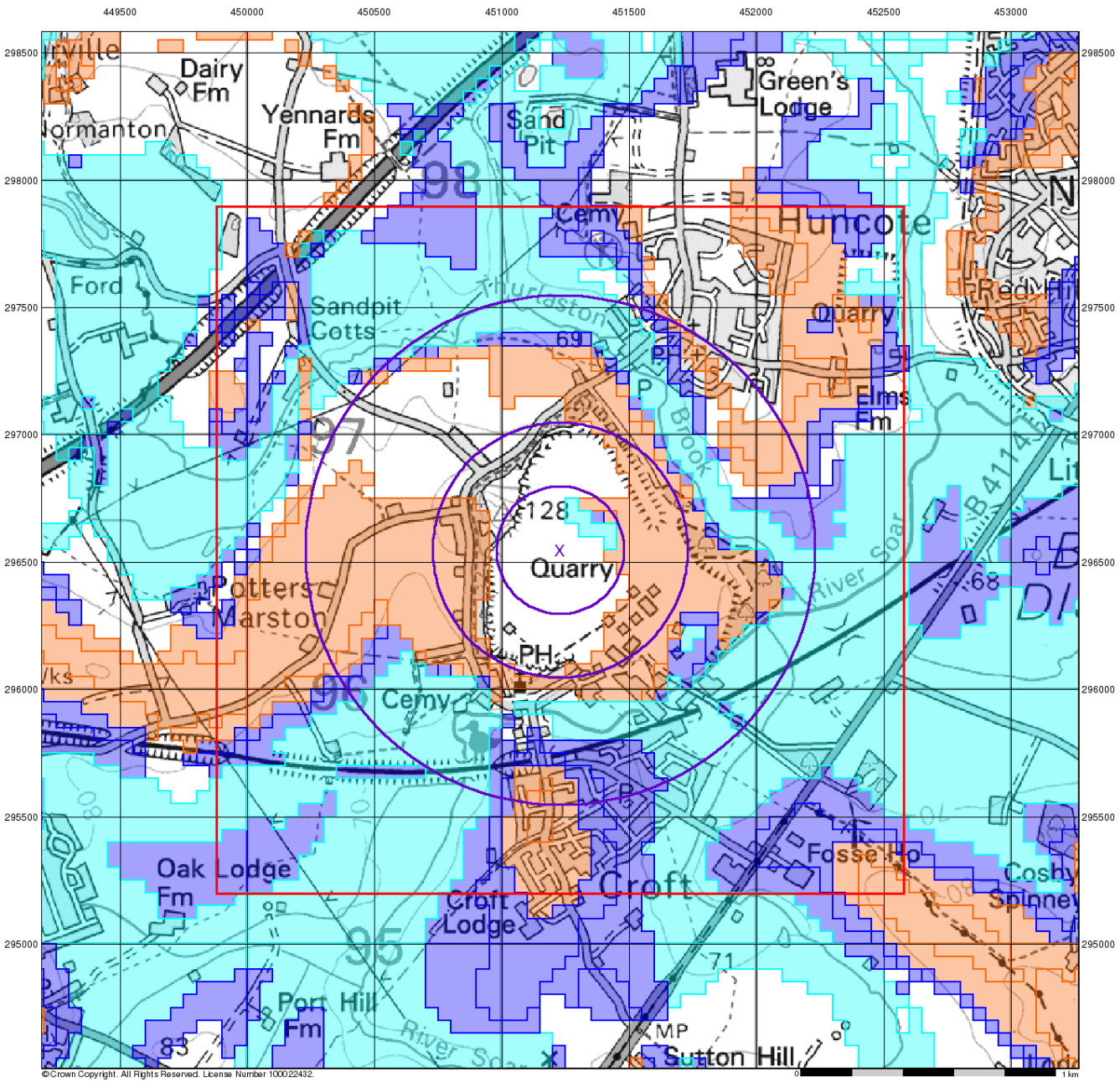

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BGS Flood GFS Data

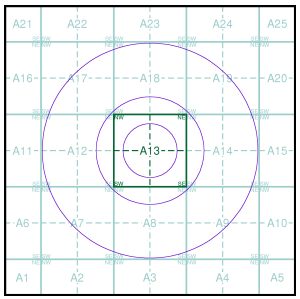
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



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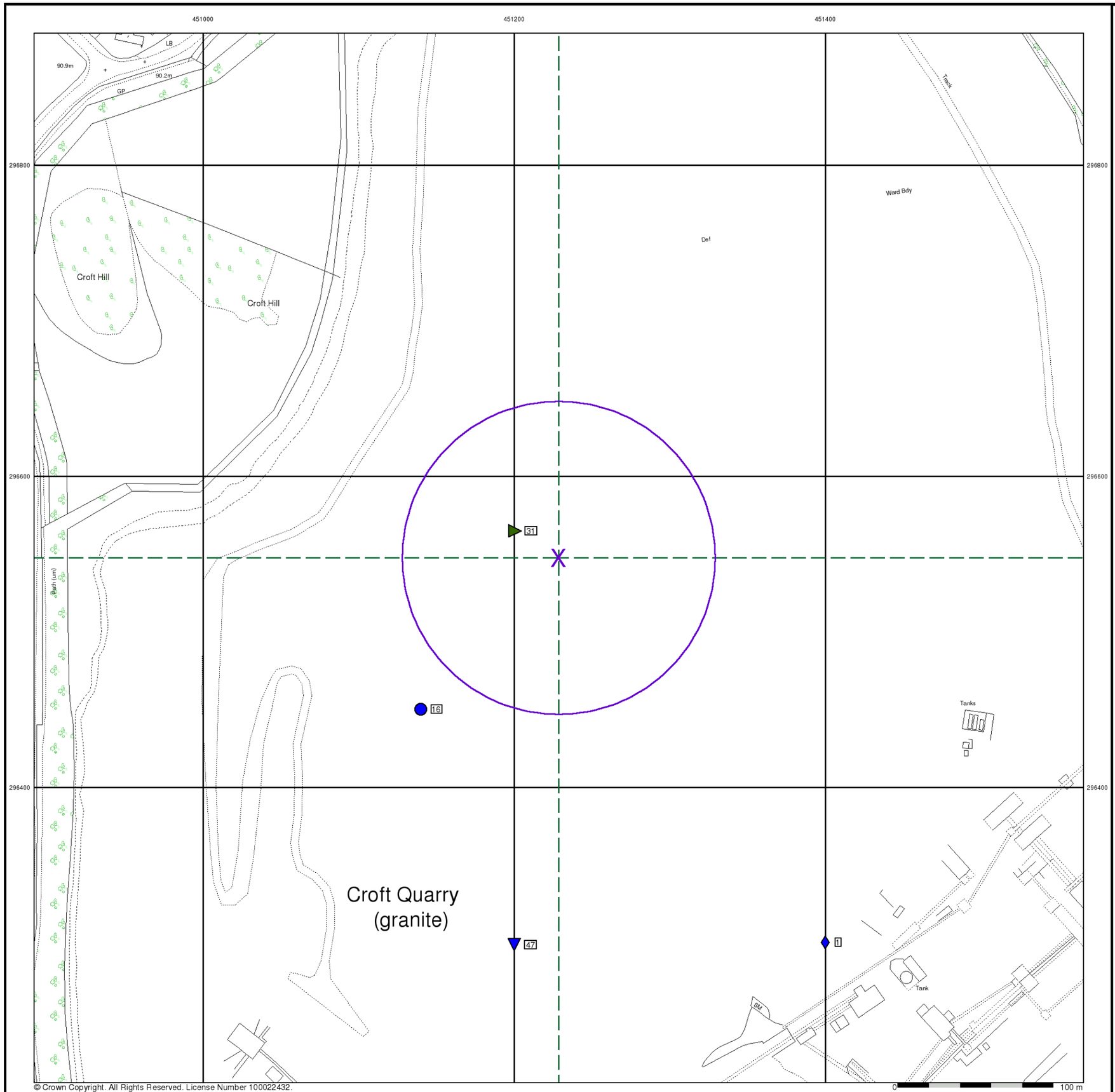
Search Buffer (m):	1000

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

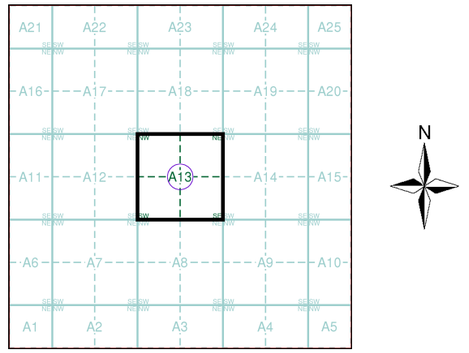
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

Order Number:	109996096_1_1
Customer Ref:	65543
National Grid Reference:	451230, 296550
Slice:	A
Site Area (Ha):	0.01
Plot Buffer (m):	100

Site Details

Aggregate Industries, Croft Quarry, Coventry Road, Croft, LEICESTER, LE9 3GP

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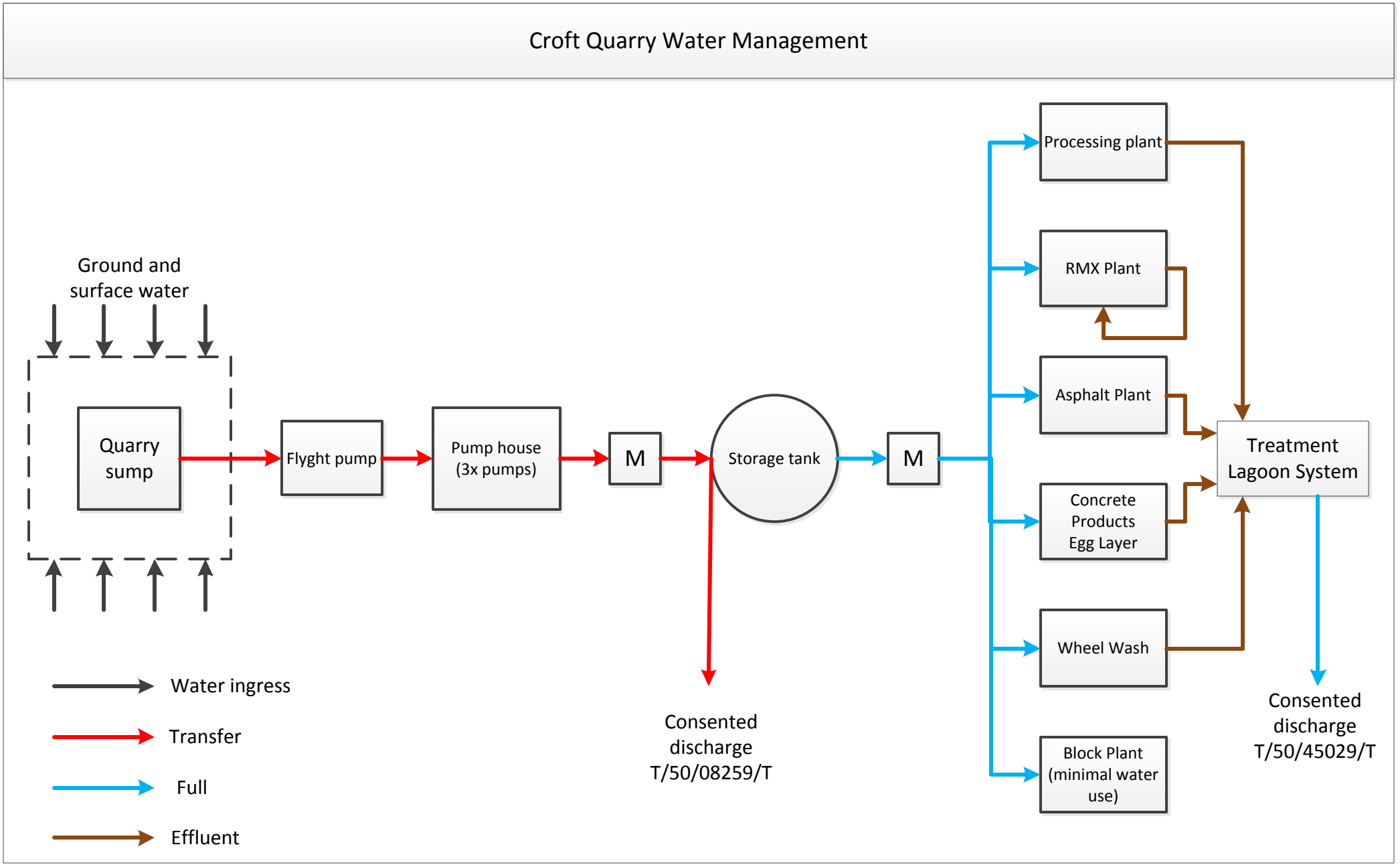
APPENDIX ESSD2
Existing Quarry Water Management Strategy


Croft Quarry Water Management
Ground and surface water
Quarry sump
Flyght pump
Pump house (3x pumps)
M
Storage tank
M
Processing plant
RMX Plant
Asphalt Plant
Concrete Products Egg Layer
Wheel Wash
Block Plant (minimal water use)
Treatment Lagoon System
Consented discharge T/50/08259/T
Consented discharge T/50/45029/T
Water ingress
Transfer
Full
Effluent

APPENDIX ESSD3
Borehole Logs

BH14/1973 ?
GL 69.3m AOD (Cored hole)
0 - 3.7m Soft O/B (65.7m AOD)
3.7 - 68.3m Mudstone O/B
Depth to Rockhead 68.3m (1.1m AOD)

GL 75.6m AOD (Cored hole)
0 - 7.0m Soft O/B (68.6m AOD)
7.0 - 60.0m Mudstone O/B
Depth to Rockhead 60.0m (15.5m AOD)

BH15/1973 ?

GL 73.6m AOD (Open hole)
0 - 7.5m Soft O/B (66.1m AOD)
7.5 - 61.3m Mudstone O/B
Depth to Rockhead 61.3m (12.3m AOD)

BH20/1973 ?

GL 72.4m AOD (Open hole)
0m Soft O/B?
0.0 - 85.0m Mudstone O/B
Depth to Rockhead 85.0m (-12.6m AOD)

GL 79.6m AOD (open hole)
0m Soft O/B?
0.0 - 29.9m Mudstone O/B
Depth to Rockhead 29.9m (49.8m AOD)

BH6/1973 ?

GL 71.0m AOD (open hole)
0m Soft O/B?
0.0 - 72.5m Mudstone O/B
Depth to Rockhead 72.5m (-1.5m AOD)

BH17/1973 ?

BH21/1973 ?

GL 74.0m AOD (Open hole)
0 - 8.5m Soft O/B (65.5m AOD)
8.5 - 83.2m+ Mudstone O/B
Depth to Rockhead <83.2m (<9.2m AOD)

BH18/1973 ?

GL c.71m AOD
0 - 20.7m+ Soft O/B (<50.3m AOD)
-
0 - 4.3m Alluvium? (open hole)
4.3 - 16.0m Glacial Lake Clays
16.0 - 20.7m+ Glacial Till

BH1/2001

BH4/1999

GL 71.8m AOD
0 - 18.0m Soft O/B (53.8m AOD)
18.0 - 84.7m Mudstone O/B
Depth to Rockhead 84.7m (-12.9m AOD)

BH19/1973 ?

BH22/1973 ?

BH3/1999

GL 69.1m AOD
0 - 36.0m Soft O/B (33.1m AOD)
36.0 - 79.5m Mudstone O/B
Depth to Rockhead 79.5m (-10.4m AOD)

BH2/1999

GL 71.8m AOD
0 - 44.5m Soft O/B (27.3m AOD)
44.5 - 84.5m Mudstone O/B
Depth to Rockhead 84.5m (-12.7m AOD)

BH1/1999

GL 75.4m AOD (open hole)
0m Soft O/B?
0.0 - 26.8m Mudstone O/B
Depth to Rockhead 26.8m (48.6m AOD)

GL 71.5m AOD (open hole)
0m Soft O/B?
0.0 - 58.2m Mudstone O/B
Depth to Rockhead 58.2m (13.3m AOD)

GL 70.0m AOD
0 - 36.0m Soft O/B (34.0m AOD)
36.0 - 64.5m Mudstone O/B
Depth to Rockhead 64.5m (5.5m AOD)

Pond
Thurlaston Brook
Recycled Stocking Area
Recently Disturbed Area
Unable to survey this area (Blasted Material) Face toe levels estimated
Tanks
Type 1
Plant
Asphalt Plant (not surveyed)
Surge pile
Concrete Pad
new concrete pad
car park
stockpile
car/lorry park
Rock Feature
Heathcote Arms (PH)
HILL STREET
Hall
The Old School
School House
TCB
Croft Bridge
FB
El Sub Sta
Shelter
STATION ROAD
River Soar
vegetation
Car Park
Croft Sidings
Pump House
MARION'S WAY
SP
SB
WP 10
Path
Depot
Works
Tanks
Sports Ground

BH18/1973 ?
Borehole number and year drilled. (? - interpreted borehole number based on available information)

GL 69.1m AOD — Original borehole ground elevation (m AOD)
0 - 36.0m Soft O/B (33.1m AOD) — Soft (undifferentiated superficial overburden). Base in mAOD shown in brackets
36.0 - 79.5m Mudstone O/B — Depth of Mercia Mudstone overburden
Depth to Rockhead 79.5m (-10.4m AOD) — Depth to rockhead / base of overburden with AOD level shown in brackets

It should be noted that detailed borehole logs have not been found.

Extraction limit based on concept design

AGGREGATE INDUSTRIES

Site Name	CROFT QUARRY
Drawing Title	Summary Borehole Plan (Plant Area)
SCALE: 1:3000	Size: A3
DATE: April 2017	DRAWING No. 8100/CA/4
By: CA	Chk: -

STRUCTURAL SOILS LTD

TEST REPORT

1774

Report No. 783022 R4

Date	28-June-2018	Contract	Croft Quarry

Client Aggregate Industries Ltd
Address Bardon Hill
Coalville
Leicestershire
LE67 1TL

For the Attention of Christina Allen

Order received	05-March-2018	Client Reference	
Testing Started	09-March-2018	Client Order No.	
Testing Completed	30-June-2018	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

UKAS Accredited Tests

Moisture Content (oven drying method) BS1377:Part 2:1990,clause 3.2 (superseded)**
Liquid Limit (one point method) BS1377:Part 2:1990,clause 4.4
Plastic Limit BS1377:Part 2:1990,clause 5.3
Plasticity Index Derivation BS1377:Part 2:1990,clause 5.4
Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2
Particle Size Distribution sedimentation pipette method BS1377:Part 2:1990,clause 9.4
Dry density/moisture content relationship 4.5kg rammer method BS1377:Part 4:1990 clause 3.5/3.6
Bulk Density-linear mesurement method BS EN ISO 17892-2:2014

Non UKAS Accredited Tests

Point Load Index ISRM:2007
Unconfined compressive strength - load control method ISRM:2007

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of.
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd, The Potteries, Pottery Street, Castleford, WF10 1NJ Tel.01977 552255. E-mail mark.athorne@soils.co.uk

DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH8** Sample Ref: **1** Sample Type: **U** Depth (m): **6.70**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Greyish brown slightly sandy CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	92.74	90.77
Diameter (mm) :	97.22	95.13
Volume (cm^3) :	688.44	644.53

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	25	25
Bulk density (Mg/m^3) :	2.02	2.15
Dry density (Mg/m^3) :	1.61	1.72

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **6**

Consolidation Stage

Cell Pressure (kPa) : **435** Back Pressure (kPa) : **300** Volume Change (ml) : **43.91**

Duration (days) : **20**

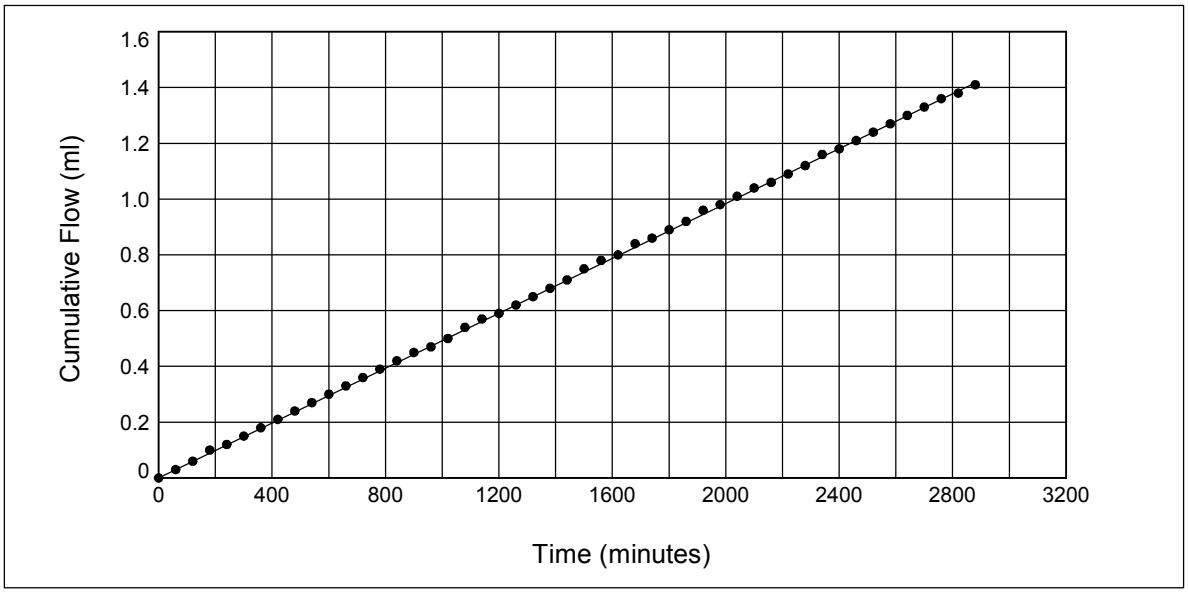
Permeability Stage

Cell Pressure (kPa) : **435** Top Pressure (kPa) : **350** Base Pressure (kPa) : **300**

Duration (days) : **3**

Mean Effective Stress : **110** Hydraulic Gradient : **56**

Coefficient of Permeability at 20 deg C (m/s) : **2.02E-11** Test Duration (days) : **29**



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By	Date
ABBY MITCHELL	23/05/18

Contract	Contract Ref:
Croft Quarry	**783022**

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DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH8** Sample Ref: **2** Sample Type: **U** Depth (m): **12.27**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Brown CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	95.88	93.60
Diameter (mm) :	101.83	99.38
Volume (cm^3) :	780.84	725.20

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	21	21
Bulk density (Mg/m^3) :	2.07	2.22
Dry density (Mg/m^3) :	1.71	1.84

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **8**

Consolidation Stage

Cell Pressure (kPa) : **550** Back Pressure (kPa) : **300** Volume Change (ml) : **55.64**

Duration (days) : **19**

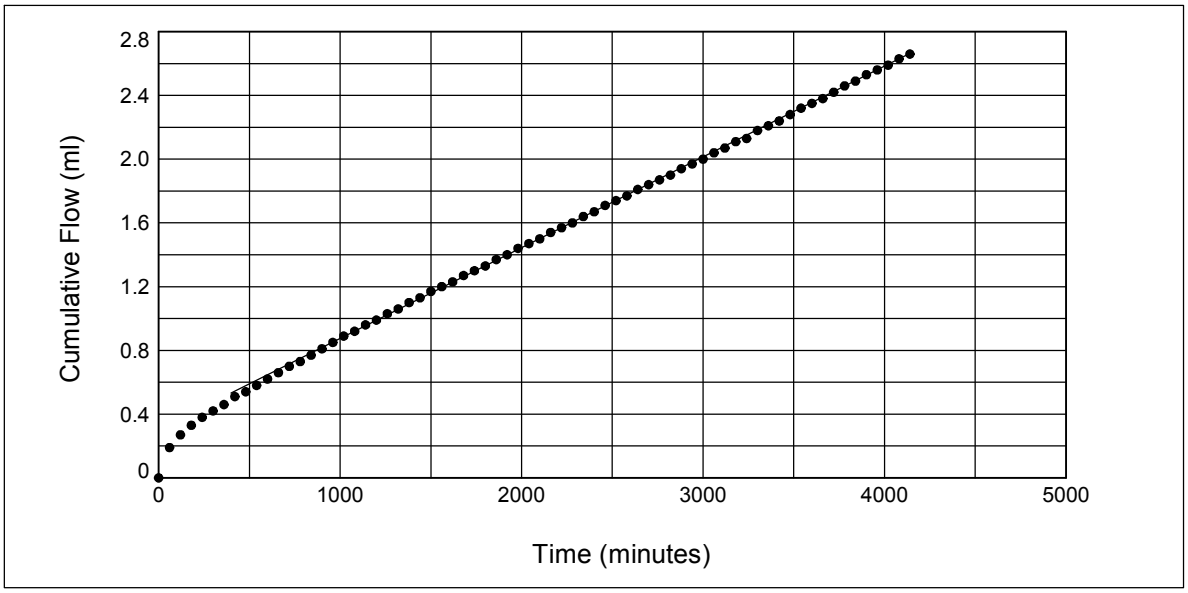
Permeability Stage

Cell Pressure (kPa) : **550** Top Pressure (kPa) : **375** Base Pressure (kPa) : **300**

Duration (days) : **3**

Mean Effective Stress : **212** Hydraulic Gradient : **82**

Coefficient of Permeability at 20 deg C (m/s) : **1.53E-11** Test Duration (days) : **30**



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Bristol
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ABBY MITCHELL	28/06/18

Contract	Contract Ref:
Croft Quarry	**783022**

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DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH8** Sample Ref: **5** Sample Type: **U** Depth (m): **21.12**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Brown slightly sandy slightly gravelly silty CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	98.57	97.00
Diameter (mm) :	102.74	101.10
Volume (cm^3) :	817.16	778.32

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	14	13
Bulk density (Mg/m^3) :	2.24	2.34
Dry density (Mg/m^3) :	1.97	2.07

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **6**

Consolidation Stage

Cell Pressure (kPa) : **720** Back Pressure (kPa) : **300** Volume Change (ml) : **38.84**

Duration (days) : **5**

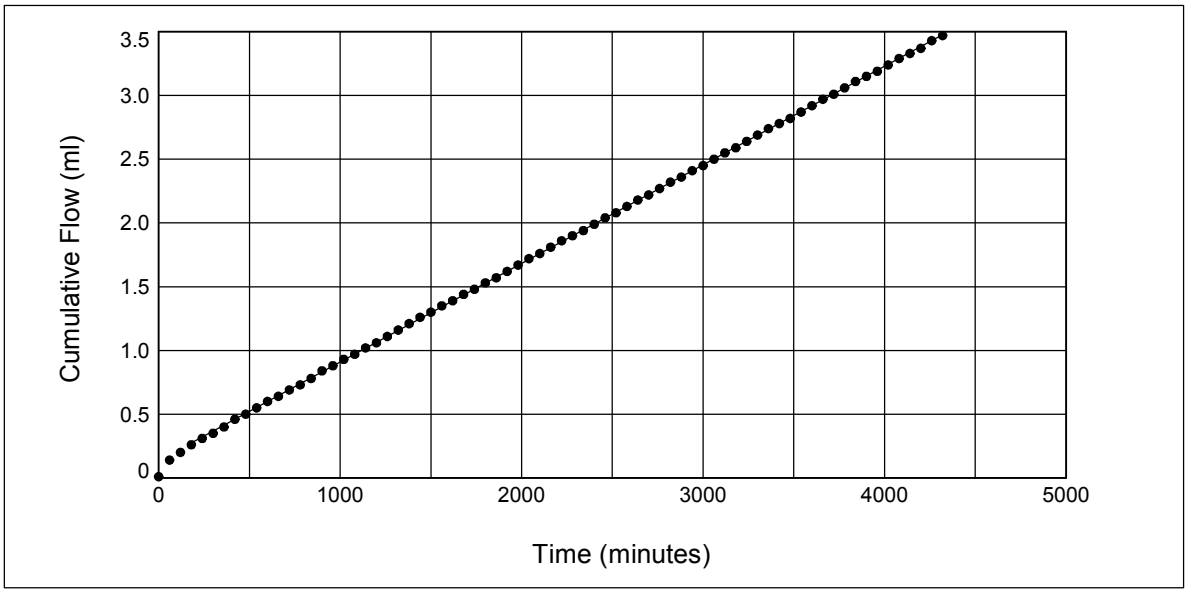
Permeability Stage

Cell Pressure (kPa) : **720** Top Pressure (kPa) : **400** Base Pressure (kPa) : **300**

Duration (days) : **3**

Mean Effective Stress : **370** Hydraulic Gradient : **105**

Coefficient of Permeability at 20 deg C (m/s) : **1.49E-11** Test Duration (days) : **14**



STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	ABBY MITCHELL		28/06/18
	Contract **Croft Quarry**	Contract Ref: **783022**	

DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH9** Sample Ref: **2** Sample Type: **U** Depth (m): **9.24**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Greyish brown slightly sandy CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	95.99	93.61
Diameter (mm) :	101.91	99.35
Volume (cm^3) :	782.97	724.71

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	28	27
Bulk density (Mg/m^3) :	1.98	2.12
Dry density (Mg/m^3) :	1.54	1.67

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **8**

Consolidation Stage

Cell Pressure (kPa) : **485** Back Pressure (kPa) : **300** Volume Change (ml) : **58.26**

Duration (days) : **21**

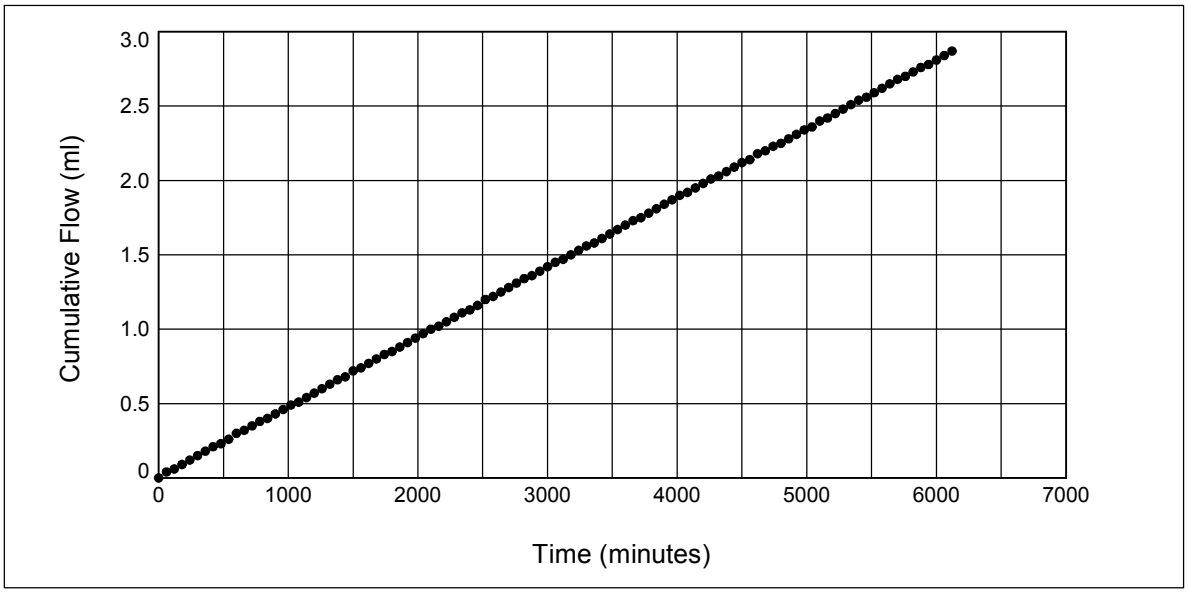
Permeability Stage

Cell Pressure (kPa) : **485** Top Pressure (kPa) : **350** Base Pressure (kPa) : **300**

Duration (days) : **2**

Mean Effective Stress : **160** Hydraulic Gradient : **54**

Coefficient of Permeability at 20 deg C (m/s) : **1.82E-11** Test Duration (days) : **31**



STRUCTURAL SOILS
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Bristol
BS3 4AG

Compiled By	Date
ABBY MITCHELL	23/05/18

Contract	Contract Ref:
Croft Quarry	**783022**

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DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH9** Sample Ref: **3** Sample Type: **U** Depth (m): **12.97**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Dark greyish brown slightly sandy CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	95.90	93.57
Diameter (mm) :	101.48	98.98
Volume (cm^3) :	775.71	719.13

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	24	23
Bulk density (Mg/m^3) :	2.06	2.20
Dry density (Mg/m^3) :	1.65	1.79

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **6**

Consolidation Stage

Cell Pressure (kPa) : **560** Back Pressure (kPa) : **300** Volume Change (ml) : **56.58**

Duration (days) : **9**

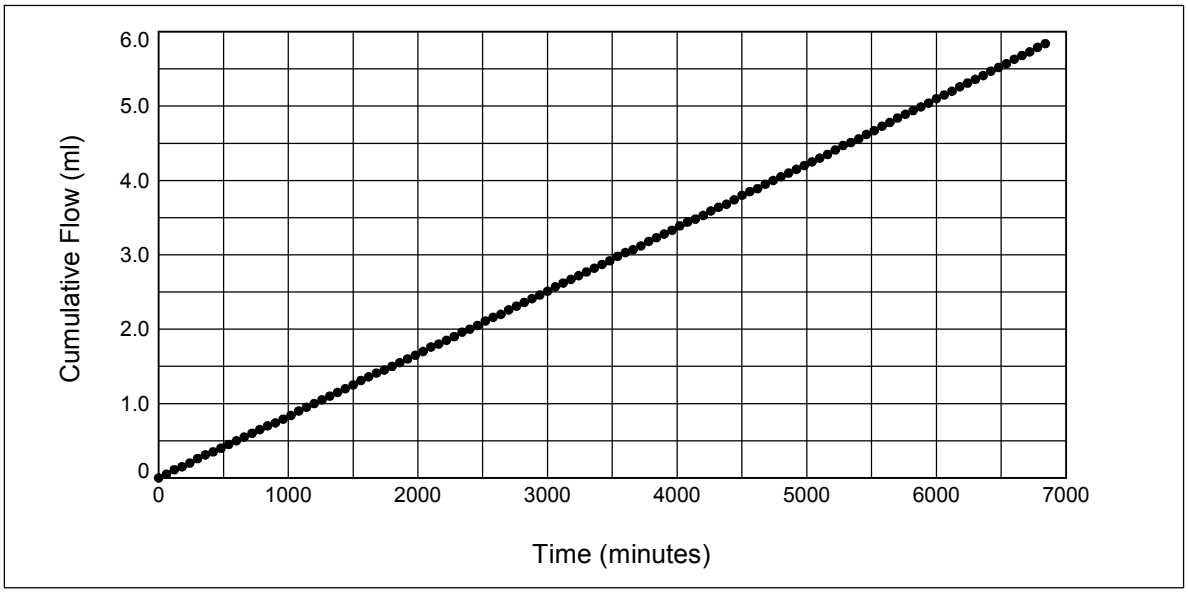
Permeability Stage

Cell Pressure (kPa) : **560** Top Pressure (kPa) : **375** Base Pressure (kPa) : **300**

Duration (days) : **4**

Mean Effective Stress : **222** Hydraulic Gradient : **82**

Coefficient of Permeability at 20 deg C (m/s) : **2.26E-11** Test Duration (days) : **19**



	Compiled By	Date
STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG	EMY HOWARD	23/05/18
	Contract: **Croft Quarry**	Contract Ref: **783022**

DETERMINATION OF CONSTANT HEAD PERMEABILITY IN A TRIAXIAL CELL

BS1377:Part 6:1990, Clause 6

Borehole: **BH9** Sample Ref: **9** Sample Type: **U** Depth (m): **39.95**

Preparation method : **Undisturbed**

Orientation : **Vertical**

Description : **Brown slightly sandy slightly gravelly CLAY**

Specimen Details	**Initial**	**Consolidated**
Height (mm) :	97.30	94.78
Diameter (mm) :	102.21	99.52
Volume (cm^3) :	798.29	736.16

Specimen Conditions	**Initial**	**Final**
Moisture content (%) :	6.9	13
Bulk density (Mg/m^3) :	2.14	2.45
Dry density (Mg/m^3) :	2.00	2.16

Test Conditions

Saturation Stage

Method : **Cell and Back pressure increments** Final *B* value : **1.00**

Duration (days) : **4**

Consolidation Stage

Cell Pressure (kPa) : **800** Back Pressure (kPa) : **300** Volume Change (ml) : **62.13**

Duration (days) : **4**

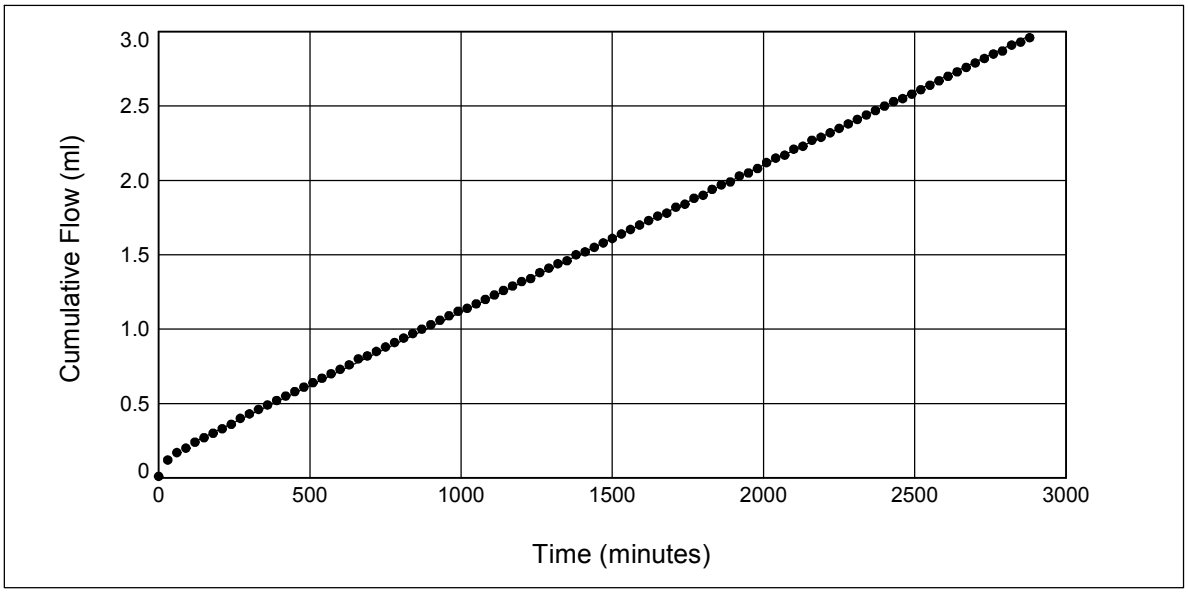
Permeability Stage

Cell Pressure (kPa) : **800** Top Pressure (kPa) : **400** Base Pressure (kPa) : **300**

Duration (days) : **2**

Mean Effective Stress : **450** Hydraulic Gradient : **108**

Coefficient of Permeability at 20 deg C (m/s) : **1.92E-11** Test Duration (days) : **10**



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
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Compiled By	Date
ABBY MITCHELL	28/06/18

Contract	Contract Ref:
Croft Quarry	**783022**

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TESTING VERIFICATION CERTIFICATE

UKAS TESTING
1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **29/06/2018 07:45:12**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Luke Fisher (Materials Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **Croft Quarry**	Job No: **783022**

AGS

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					1 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			90.01		(3.50) 3.50			Light brown silty sandy TOPSOIL and subsoil. Occaisonal sub-angular to sub-rounded DIORITE gravel clasts	TS	
			87.51		(2.50) 6.00			Light Brown weathered DIORITE. Drill returns are sand and angular fine to medium gravel fragments.	SLED	
								Grey fresh DIORITE. Drill returns are grey gravels.	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					2 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					3 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					4 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(236.00)			Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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160-162 Abbey Foregate
Shrewsbury, SY2 6FD
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					5 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					6 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH01
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	03-11-17 13-11-17	93.51		E 451,078.8 N 296,841.2	
Contractor					Sheet
Apex Drilling Services					7 of 7

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			-148.49		242.00			Grey fresh DIORITE. Drill returns are grey gravels. *(continued)*	SLED	

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 3 m depth
PLAIN PIPE: 50 mm diameter to 5.61 m
SCREEN: 50 mm diameter 5.61 - 242 m
BACKFILL: Bentonite to 5 m, Sand 5 - 5.5 m and Gravel 5.5 - 242 m
GROUNDWATER: Borehole mostly dry, water at 205 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02A
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	28-09-17 29-09-17	73.33		E 451,364.1 N 296,134.8	
Contractor					Sheet
Apex Drilling Services					1 of 1

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			72.83		0.50			MADE GROUND: gravel size fragments of brick and diorite.	MG	
			72.33		1.00			Greyish orange gravelly CLAY. Gravel is subrounded to angular and from a range of provenances.	GT	
					(5.00)			Grey orange sandy gravelly CLAY. Gravel is rounded to angular but mostly rounded.	GT	
			67.33		6.00			Reddish brown weathered MUDSTONE. Weathered to clay and recovered mostly as clay with some grey more silty layers.	MMG	
					(3.00)					
			64.33		9.00			Reddish brown MUDSTONE with decreasing frequency of silty layers which disappear from 13 m depth.	MMG	
					(14.00)					
			50.33		23.00					
			49.33		24.00			Reddish brown MUDSTONE with gravel sized fragments of DIORITE of possible boulder.	MMG	
			48.33		25.00			Reddish brown MUDSTONE.	MMG	
					(2.80)			Recovered as gravel DIORITE fragments and reddish brown MUDSTONE, possibly within zone of DIORITE contact.	MMG	
			45.53		27.80					
			45.33		28.00			DIORITE	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 8.13 m
SCREEN: 50 mm diameter 8.13 - 23 m
BACKFILL: Bentonite to 7.2 m, Sand 7.2 - 7.7 m, Gravel 7.7 - 23 m, and Bentonite 23 - 28 m
GROUNDWATER: Strike at 6 m depth - rebound to 2.3 m.

All dimensions in metres Scale 1: 188	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW

AGS3 UK DH BOREHOLELOGS.GPJ ESI_STANDARD.GDT 21/12/17

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					1 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			72.94		0.50			MADE GROUND - angular to sub-rouneded DIORITE gravel with rounded imported gravel.	MG	
			72.44		1.00				GT	
			71.44		2.00				GT	
			70.44		3.00				GT	
					(3.00)			Dark grey gravelly CLAY. Gravel is sub-angular to sub-rounded and poorly sorted.	GT	
			67.44		6.00			Greyish orange gravelly CLAY. Gravel is sub-angular to sub-rounded and poorly sorted.		
								Greyish orange gravelly CLAY. Gravel is sub-angular to sub-rounded and poorly sorted.		
								Dark grey to orange brown, sandy gravelly CLAY . Clay matrix is sandy.		
					(12.60)			WEATHERED MERCIA MUDSTONE As logged by Aggregate Industries	MMG	
			54.84		18.60					
					(7.50)			MERCIA MUDSTONE As logged by Aggregate Industries	MMG	
			47.34		26.10					
			46.34		27.10			TRANSITION ZONE As logged by Aggregate Industries	MMG	
			44.74		28.70			DIORITE As logged by Aggregate Industries	SLED	
					(2.60)			WEATHERED / ALTERED DIORITE As logged by Aggregate Industries	SLED	
			42.14		31.30			DIORITE As logged by Aggregate Industries	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					2 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE As logged by Aggregate Industries *(continued)*	SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					3 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE As logged by Aggregate Industries *(continued)*	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

ESI Ltd
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					4 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(190.20)			DIORITE As logged by Aggregate Industries *(continued)*	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

ESI Ltd
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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					5 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE As logged by Aggregate Industries *(continued)*	SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

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Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH02B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	02-10-17 31-10-17	73.44		E 451,358.6 N 296,133.1	
Contractor					Sheet
Apex Drilling Services					6 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE As logged by Aggregate Industries *(continued)*	SLED	
			-148.06		221.50					

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary coring to 147.737m. Rotary open hole drilling to 221.5m; TEMPORARY CASING: 130mm diameter to 147.737m depth. 200 mm diameter to 8.8m depth; PLAIN PIPE: 50mm diameter to 29.4m; SCREEN: 50mm diameter 29.4-221.5m; BACKFILL: Bentonite to 28m, Sand 28 - 29m and Gravel 29-221.5m; GROUNDWATER: Water flush used and natural water level uncertain with depth.

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/CA

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Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03A
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	27-09-17 27-09-17	74.00		E 451,630.3 N 296,449.4	
Contractor					Sheet
Apex Drilling Services					1 of 1

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			72.00		(2.00) 2.00			MADE GROUND: dominantly DIORITE cobbles and gravel.	MG	
			71.00		(1.00) 3.00			Clayey GRAVEL. Gravel is poorly sorted and sub-angular to sub-rounded.	GT	
			70.00		(1.00) 4.00			Gravelly CLAY. Gravel is poorly sorted and sub-angular to sub-rounded.	GT	
			69.00		(1.00) 5.00			Clayey GRAVEL. Gravel is poorly sorted and sub-angular to sub-rounded.	GT	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: Not installed
PLAIN PIPE: 50 mm diameter to 2.16 m
SCREEN: 50 mm diameter 2.16 - 3.11 m
BACKFILL: Bentonite to 1.8 m, Sand 1.8 - 2 m and Gravel 2 - 3.11 m
GROUNDWATER: No water strikes

All dimensions in metres Scale 1: 125	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW

borehole number: BH02B

site: Croft Quarry

ground level: 73.4 **contractor:** Apex Drilling Services **date:** 10/2017

easting: 451358.6 **drill rig:** Fraste XL Multidrill **logged by:** C Allen

northing: 296133.1 **type of drilling:** HQ (62mm) Wireline. **water level:**

inclination: vertical **casing:** 30.8m

direction: Vertical

Depth (m)	Thickness (m)	Level (m AOD)	Description
0.5	0.5	72.9	**MADE GROUND**
6.0	5.5	67.4	**TILL (Superficials)** Dark grey to orange brown, gravelly clay with occasional sandy matrix. (No core recovery, description from chippings)
8.6	2.6	64.8	**WEATHERED MERCIA MUDSTONE** (No core recovery, description from chippings)
9.1	0.5	64.3	**WEATHERED MERCIA MUDSTONE** x. weak to very weak, no structure, dark reddish brown with occasional greenish grey mottling, fine grained, silty mudstone. Residual weathering.
17.1	8.0	56.3	**WEATHERED MERCIA MUDSTONE** very weak to weak, very broken core but generally thinly to very thinly bedded, dark reddish brown with occasional greenish grey mottling, fine grained, silty mudstone. Destructed weathering. Bedding <5°.
18.6	1.5	54.8	**WEATHERED MERCIA MUDSTONE** x. weak to weak, very broken core, no structure, dark reddish brown with occasional greenish grey mottling, fine grained, silty mudstone. Distinctly weathered.
21.6	3.0	51.8	**MERCIA MUDSTONE** x. weak to weak, thinly to very thinly bedded but core broken, dark reddish brown with occasional greenish grey mottling, fine grained, silty mudstone. Partially weathered. Bedding <5°. (Note some core broken when removed from core liner)
	4.5		**MERCIA MUDSTONE** Weak, broken core, thinly to very thinly bedded, dark reddish brown, fine grained, silty mudstone. Fresh. Bedding <5° increasing to 21° at contact with diorite.

Depth (m)	TCR %	SCR %	RQD %	FI mm
9.1	27	5	0	
9.8	67	11	0	
11	67	30	25	
12.5	77	13	7	
14	77	11	0	
15.6	75	71	0	
17.1	90	16	0	
18.6	87	0	0	
20.1	86	19	15	
21.7	81	18	6	NI
23.2	94	60	23	79
24.7	95	15	7	

Comments: 50 mm Piezometer Installed

borehole number: BH02B

site: **Croft Quarry**

ground level: 73.4 **contractor:** Apex Drilling Services **date:** 10/2017

easting: 451358.6 **drill rig:** Fraste XL Multidrill **logged by:** C Allen

northing: 296133.1 **type of drilling:** HQ (62mm) Wireline. **water level:**

inclination: vertical **casing:** 30.8m

direction: Vertical

Depth (m)	Thickness (m)	Level (m AOD)	Description	Log
26.1		47.3		
27.1	1.0	46.3	**TRANSITION ZONE** Very strong to strong, diorite with baked interclasts of reddish brown, Mercia Mudstone.	
28.7	1.6	44.7	**DIORITE** Very strong to strong, pinkish grey with black mica, medium coarse grained, crystalline, diorite. Fresh. Broken core but J1 17° to core axis, rough, with quartz infill.	
31.3	2.7	42.0	**WEATHERED / ALTERED DIORITE** Strong, pinkish grey with black mica, medium coarse grained, crystalline, diorite. Altered. Very broken core.	
46.6	15.3	26.7	**DIORITE** Very strong to x. strong, mottled reddish grey with black and white mottling, medium coarse grained, crystalline, diorite with occasional fine grained xenoliths and quartz veining. Fresh. J1 5°, J2 75°, J3 55° to core axis, rough, with quartz and weathered white feldspar infill. Significant veins at 36.42-36.49m, 38.07-36.49m, 42.16-42.40m.	
			DIORITE Very strong locally strong, mottled reddish grey and locally mid grey at 55.25-55.70m, medium coarse to coarse grained, crystalline, diorite with increasing xenoliths from 55.25-55.95m. Fresh. J1 10° rough, J2 68°, widely spaced, rough, generally clean.	

Depth (m)	TCR %	SCR %	RQD %	FI mm
26.2	96	10	0	NI
27.8	87	42	39	100
29.3	92	43	19	
30.8	100	12	0	
31.2	100	0	0	NI
32.3	91	58	51	
33.8	100	56	47	
35.4	94	87	84	
36.9	100	92	73	
38.4	100	77	67	
39.9	100	99	91	
41.4	100	91	86	359
42.9	100	57	19	136
44.5	94	84	22	
46	93	73	67	
47.5	100	45	40	
49	100	70	60	
50.6	94	74	77	

Comments: 50 mm Piezometer Installed

borehole number: BH02B

site: **Croft Quarry**

ground level: 73.4 **contractor:** Apex Drilling Services **date:** 10/2017

easting: 451358.6 **drill rig:** Fraste XL Multidrill **logged by:** C Allen

northing: 296133.1 **type of drilling:** HQ (62mm) Wireline. **water level:**

inclination: vertical **casing:** 30.8m

direction: Vertical

Depth (m)	Thickness (m)	Level (m AOD)	Description	Log	Depth (m)	TCR %	SCR %	RQD %	FI mm
	11.1				52.1	100	99	85	
					53.6	100	93	81	
					55.1	100	91	85	
					56.7	94	94	87	329
57.6		15.6							
	15.5		**DIORITE** Very strong, mottled pale reddish grey with local bands of mottled mid to dark grey at 58.2-59.0m, 63.4-64.1m and 68.0-69.4m, generally coarse grained, crystalline, diorite with occasional xenoliths up to 80mm in size of dark grey, fine to fine medium grained, crystalline rock e.g. at 71.1m. Fresh. J1 5 to 10° rough dominant, J2 60°, widely spaced, rough, occasionally mineralised, generally clean.		58.2	100	96	85	
					59.7	100	100	83	
					61.2	100	100	100	
					62.8	94	91	91	
					64.3	100	100	84	
					65.8	100	100	100	
					67.3	100	100	87	
					68.8	100	99	82	
					70.4	94	94	94	
					71.89	100	101	86	
73.1		0.1			73.4	99	88	78	491
			DIORITE Very strong to strong, mottled reddish grey and reddish brown, locally mid grey, coarse grained, crystalline, diorite with occasional xenoliths of dark grey, fine medium grained, crystalline rock. Fresh. J1 5 to 8° rough dominant, widely spaced, J2 50°, widely to very widely spaced, rough, generally clean.		74.9	94	79	70	
					76.5	94	91	91	

Comments: 50 mm Piezometer Installed

borehole number: BH02B

site: **Croft Quarry**

ground level: 73.4
easting: 451358.6
northing: 296133.1
inclination: vertical
direction: Vertical

contractor: Apex Drilling Services
drill rig: Fraste XL Multidrill
type of drilling: HQ (62mm) Wireline.
casing: 30.8m

date: 10/2017
logged by: C Allen
water level:

Depth (m)	Thickness (m)	Level (m AOD)	Description	Log	Depth (m)	TCR %	SCR %	RQD %	FI mm
					78	100	97	93	
					79.5	100	100	90	
					81	100	95	95	
					82.5	100	100	100	
					84.1	94	88	76	
					85.6	100	89	86	
	26.4				87.12	99	95	85	
					88.6	100	101	101	
					90.2	94	94	91	
					91.7	100	100	89	
					93.2	97	97	85	
					94.7	100	100	100	
					96.2	100	100	93	
					97.8	94	94	88	
99.5		-26.3			99.3	100	100	100	647
	2.5		**Diorite** As above but with increasing mineral veins.		100.8	100	87	85	
102.0		-28.8							

Comments: 50 mm Piezometer Installed

borehole number: BH02B

site: Croft Quarry

ground level: 73.4
easting: 451358.6
northing: 296133.1
inclination: vertical
direction: Vertical

contractor: Apex Drilling Services
drill rig: Fraste XL Multidrill
type of drilling: HQ (62mm) Wireline.
casing: 30.8m

date: 10/2017
logged by: C Allen
water level:

Depth (m)	Thickness (m)	Level (m AOD)	Description	Log	Depth (m)	TCR %	SCR %	RQD %	FI mm
	30.0		**DIORITE** Very strong to strong, alternating mottled reddish grey and pale grey, coarse grained, crystalline, diorite with occasional xenoliths of dark grey, fine medium grained, crystalline rock. Fresh. J1 5 to 10° rough dominant, widely spaced clean occasional mineral infilling, J2 45 to 60°, very widely spaced, rough, generally clean. Core very broken at 131.7 to 132.0m.		102.4	94	87	78	
					103.9	100	95	92	
					105.4	100	100	100	
					106.9	100	100	95	
					108.4	100	100	100	
					110	94	93	93	
					111.5	100	100	94	
					113	100	93	75	
					114.5	100	98	98	
					116.1	94	94	94	
					117.6	100	100	100	
					119.1	100	95	88	
					120.6	100	80	73	
					122.1	100	100	88	
					123.7	94	94	94	
					125.2	100	100	90	
					126.7	100	100	95	

Comments: 50 mm Piezometer Installed

borehole number: BH02B

site: **Croft Quarry**

ground level: 73.4 **contractor:** Apex Drilling Services **date:** 10/2017

easting: 451358.6 **drill rig:** Fraste XL Multidrill **logged by:** C Allen

northing: 296133.1 **type of drilling:** HQ (62mm) Wireline. **water level:**

inclination: vertical **casing:** 30.8m

direction: Vertical

Depth (m)	Thickness (m)	Level (m AOD)	Description	Log
132.0		-58.8		
136.9	4.9	-63.7	**Diorite** As above but with quartz veins running along length of core varying from 1mm to 5mm in size.	
143.2	6.3	-70.0	**DIORITE** Very strong to strong, alternating mottled reddish grey and pale grey, coarse grained, crystalline, diorite with occasional xenoliths of dark brown and mid grey, fine medium grained, crystalline rock. Fresh. J1 5 to 10° rough, widely spaced clean.	
147.7	4.5	-74.4	**DIORITE** Very strong to strong, mottled rusty brown, some evidence of feldspar alteration and veining, coarse grained, crystalline, diorite with occasional xenoliths of dark brown and mid grey, fine medium grained, crystalline rock. Fresh. J1 5 to 10° rough, widely spaced clean. **<u>Piezometer installation</u>** (all backfill depths below ground level): 0-0.2m cement 0.2-28.0m bentonite 28.0-29.0m sand 29.0-221m gravel Plain 50mm pipe to 29.5m, slotted 50mm pipe to 221.0m. Cap height 0.62m Cap level 74.02m AOD	

Depth (m)	TCR %	SCR %	RQD %	FI mm
127.9	98	98	95	
129.5	91	76	76	
131	100	87	81	
132.5	100	58	51	593
134	100	100	100	
135.6	94	83	83	
137.1	100	100	100	
138.6	100	100	84	
140.1	100	96	96	
141.6	100	100	94	
143.2	94	94	94	
144.7	97	97	85	
146.2	100	93	93	
147.7	100	100	100	633

128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152

Comments: 50 mm Piezometer Installed

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-09-17 26-09-17	74.07		E 451,626.7 N 296,466.6	
Contractor					Sheet
Apex Drilling Services					1 of 2

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			73.07		1.00			MADE GROUND. Brownish grey silty sandy sub-angular gravel DIORITE.	MG	
			72.07		2.00			MADE GROUND. Brownish grey clayey silty sandy sub-angular gravel.	MG	
			71.07		3.00			MADE GROUND. Sandy slightly clayey brown gravel. Gravel is sub-angular, sand is fine to coarse	MG	
			70.07		4.00			Brown silty sandy slightly clayey GRAVEL. Sand is fine to coarse and gravel is sub-rounded to sub-angular.	GT	
			68.07		(2.00) 6.00			Brown silty sandy gravelly CLAY. Sand is medium and gravel is sub-rounded to sub-angular.	GT	
			66.07		(2.00) 8.00			Weathered MUDSTONE. Returned as brown fine grained clay.	MMG	
			63.07		(3.00) 11.00			MUDSTONE. Returned as reddish brown fine grained clay with some gravel chips.	MMG	
			62.07		12.00			Sandy reddish brown with light grey MUDSTONE.	MMG	
			59.07		(3.00) 15.00			Light greyish yellow medium to coarse SANDSTONE becoming gravelly around 14 m.	MMG	
								Reddish brown MUDSTONE	MMG	

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 10.83 m
SCREEN: 50 mm diameter 10.83 - 58 m
BACKFILL: Bentonite to 9.3 m, Sand 9.3 - 9.8 m and Gravel 9.8 - 58 m
GROUNDWATER: Water strikes at 5 m and 15 m.

All dimensions in metres Scale 1: 188	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-09-17 26-09-17	74.07		E 451,626.7 N 296,466.6	
Contractor					Sheet
Apex Drilling Services					2 of 2

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(43.00)			Reddish brown MUDSTONE *(continued)*	MMG	
			16.07		58.00					
			15.07		59.00			Weathered DIORITE	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 10.83 m
SCREEN: 50 mm diameter 10.83 - 58 m
BACKFILL: Bentonite to 9.3 m, Sand 9.3 - 9.8 m and Gravel 9.8 - 58 m
GROUNDWATER: Water strikes at 5 m and 15 m.

All dimensions in metres Scale 1: 188	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					1 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			72.11		(2.00) 2.00			MADE GROUND: dominantly DIORITE cobbles and gravel.	MG	
			71.11		3.00			Reddish brown clayey gravelly SAND. Sand is medium grained.	GT	
			69.11		(2.00) 5.00			Reddish brown gravelly CLAY. Gravel is angular to sub-rounded.	GT	
			68.11		6.00			Grey gravelly CLAY. Gravel is angular to sub-rounded.	GT	
			66.11		(2.00) 8.00			Dark grey gravelly CLAY. Gravel is from a mixture of provenances and is angular to sub-rounded.	GT	
			61.11		(5.00) 13.00			Reddish brown weather MUDSTONE becoming fresh.	MMG	
			59.11		(2.00) 15.00			Light grey fine to medium SANDSTONE.	MMG	
			58.11		16.00			Light grey fine to medium SANDSTONE and reddish brown MUDSTONE.	MMG	
			55.11		(3.00) 19.00			Light grey fine to medium SANDSTONE and reddish brown MUDSTONE. Proportion of mudstone increasing with depth.	MMG	
					(41.00)			Reddish brown MUDSTONE with rare SANDSTONE. Some thin more silty or more sandy layers.	MMG	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					2 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Reddish brown MUDSTONE with rare SANDSTONE. Some thin more silty or more sandy layers. *(continued)*	MMG	
			14.11		60.00					
								Dark grey DIORITE, weathered at first becoming rapidly fresh. Some quartz veining.	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					3 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(78.00)			Dark grey DIORITE, weathered at first becoming rapidly fresh. Some quartz veining. *(continued)*	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					4 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								Dark grey DIORITE, weathered at first becoming rapidly fresh. Some quartz veining. *(continued)*	SLED	
			-63.89		138.00					
			-64.89		139.00			DIORITE with quartz veining.	SLED	
					(24.00)			DIORITE	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					5 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			-88.89		163.00			DIORITE *(continued)*	SLED	
			-95.89		(7.00) 170.00			Orangeish red DIORITE, possibly due to increased potassium feldspar content.	SLED	
			-114.89		(19.00) 189.00			DIORITE	SLED	
			-120.89		(6.00) 195.00			DIORITE with increased presence of red mineral.	SLED	
								DIORITE	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH03C
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	11-09-17 22-09-17	74.11		E 451,629.0 N 296,456.9	
Contractor					Sheet
Apex Drilling Services					6 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE *(continued)*	SLED	
					(22.50)					
			-143.39		217.50					

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 6 m depth
PLAIN PIPE: 50 mm diameter to 63.35 m
SCREEN: 50 mm diameter 63.35 - 217 m
BACKFILL: Bentonite to 62 m, and Gravel 62 - 217 m
GROUNDWATER: Water strike at 14 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By CDW/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04A
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	01-11-17 02-11-17	67.81		E 451,441.2 N 297,135.1	
Contractor					Sheet
Apex Drilling Services					1 of 2

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			67.31		0.50			Light brownish orange sandy gravelly TOPSOIL/SUBSOIL. Sand is fine to coarse, gravel is rounded to sub-rounded.	TS	
			66.61		1.20				AL	
					(4.80)			Light brownish orange medium to coarse SAND.	GT	
			61.81		6.00			Reddish brown sandy, gravelly CLAY. Sand is medium grained, gravel is sub-rounded to rounded.		
					(5.00)			Weathered reddish brown MUDSTONE returned as clay.	MMG	
			56.81		11.00					
					(2.00)			SANDSTONE layer within MUDSTONE - not observed BUT evidenced by faster drilling rate and water ingress.	MMG	
			54.81		13.00			Reddish brown MUDSTONE of varying hardness.		
									MMG	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15.3 m depth
PLAIN PIPE: 50 mm diameter to 15.48 m
SCREEN: 50 mm diameter 15.48 - 76.56 m
BACKFILL: Bentonite to 15 m and Gravel 15 - 76.56 m
GROUNDWATER: Water strike at 12 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By HJK

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DRILLHOLE LOG

Project				DRILLHOLE No
Croft Quarry: Site Investigation				BH04A
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)
R65543.00.02	01-11-17 02-11-17	67.81		E 451,441.2 N 297,135.1
Contractor				Sheet
Apex Drilling Services				2 of 2

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(58.00)			Reddish brown MUDSTONE of varying hardness. *(continued)*	MMG	
			-3.19		71.00					
			-4.19		72.00			Reddish brown MUDSTONE with some DIORITE gravel chips of possible boulders.	MMG	
					(4.50)			Increased frequency of DIORITE returns within MUDSTONE.	MMG	
			-8.69		76.50					
			-9.19		77.00			DIORITE.	SLED	

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15.3 m depth
PLAIN PIPE: 50 mm diameter to 15.48 m
SCREEN: 50 mm diameter 15.48 - 76.56 m
BACKFILL: Bentonite to 15 m and Gravel 15 - 76.56 m
GROUNDWATER: Water strike at 12 m depth

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					1 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			67.75		0.50			Light brownish orange gravelly SAND.	ALG	
			67.05		1.20			Reddish brown SAND.	ALG	
					(4.80)			Light orangeish brown gravelly sandy CLAY.	GT	
			62.25		6.00					
			61.25		7.00			Light greyish brown gravelly CLAY.	GT	
					(3.00)			Weathered reddish brown MUDSTONE.	MMG	
			58.25		10.00					
					(3.00)			Grey SANDSTONE layer in MUDSTONE.	MMG	
			55.25		13.00					
								Reddish brown MUDSTONE.	MMG	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					2 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(57.20)			Reddish brown MUDSTONE. *(continued)*		
									MMG	
			-1.95		70.20					
			-2.25		70.50			Reddish brown MUDSTONE with some DIORITE gravel returns of possible boulders.	MMG	
								DIORITE medium grained, weathered towards upper surface.	SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					3 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
					(24.50)			DIORITE medium grained, weathered towards upper surface. *(continued)*	SLED	
			-26.75		95.00					
					(3.00)			DIORITE with subordinate green mineral.	SLED	
			-29.75		98.00					
					(12.00)			DIORITE	SLED	
			-41.75		110.00					
					(3.00)			DIORITE with coarser crystals.	SLED	
			-44.75		113.00					
								DIORITE	SLED	

Drilling Progress and Water Observations

Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush

From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

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DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					4 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE *(continued)*		
					(48.00)				SLED	

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					5 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
			-92.75		161.00			DIORITE *(continued)*	SLED	
					(3.00)			Darker DIORITE, with slightly different mineralogy possibly a lesser proportion of quartz?	SLED	
			-95.75		164.00			DIORITE		
					(54.67)				SLED	

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

ESI Ltd
160-162 Abbey Foregate
Shrewsbury, SY2 6FD
Telephone: 01743 276100

DRILLHOLE LOG

Project					DRILLHOLE No
Croft Quarry: Site Investigation					BH04B
Job No	Date	Ground Level (m AOD)	Cover Level (m AOD)	Co-Ordinates (OSGB)	
R65543.00.02	25-10-17 01-11-17	68.25		E 451,445.5 N 297,128.1	
Contractor					Sheet
Apex Drilling Services					6 of 6

RUN DETAILS			STRATA							
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION: Discontinuities	Detail	Main	Geology	Instrument/ Backfill
								DIORITE *(continued)*	SLED	
			-150.42		218.67					

Drilling Progress and Water Observations							Rotary Flush			
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing	From	To	Type	Returns

GENERAL REMARKS

METHOD: Rotary open hole drilling
TEMPORARY CASING: 200 mm to 15 m depth
PLAIN PIPE: 50 mm diameter to 75.83 m
SCREEN: 50 mm diameter 75.83 - 218.67 m
BACKFILL: Bentonite to 73.5 m and Gravel 73.5 - 218.67 m
GROUNDWATER: Water strike at 12.5 m

All dimensions in metres Scale 1: 250	Client Aggregate Industries	Method/ Plant Used Fraste XL Multidrill	Logged By AIA/HJK

Appendix ESSD4
Quarry Discharge and Abstraction Licenses

Water Resources
LICENCE TO
ABSTRACT
WATER

Environment Act 1995
Water Resources Act 1991 as amended by the Water Act 2003
Water Resources (Abstraction and Impounding) Regulations 2006

IMPORTANT NOTES

Need for safekeeping

This licence is an important document. The permission or right to abstract water may be valuable to your landholding. So -

- **Keep the licence safe, preferably with your deeds etc.**
- **Take careful note of the comments below about "transfer and apportionment" and "death and bankruptcy".**

This is to ensure that the permission and any rights granted by the licence continue if you need to pass it on to someone else.

If you want to:

- **revoke (cancel) the licence;**
- **vary (change/amend) the licence in any way or**
- **change your contact address (but you continue to hold the licence).**

Please write to WR Permitting Support, PO Box 4209, Sheffield, S9 9BS

Details of this licence are placed on a register, kept by the Environment Agency and open for inspection by the public. The public may also obtain further details about it by virtue of the Environmental Information Regulations 2004 (see also Disclosure of Information) except in special cases (for advice please contact us at the address shown on the front page of the licence).

Transfer and apportionment

If you need to pass this licence or any part of it to someone else, you must contact the Environment Agency and obtain the appropriate application forms. Temporary licences cannot be transferred or apportioned. The licence holder remains responsible for compliance with the terms of the licence and any charges payable until the licence has been transferred or apportioned.

Death or bankruptcy of the licence holder

If a licence has been **'vested'** in you, as a result of the death or bankruptcy of the licence holder, please contact the Environment Agency in writing, telling us the licence number(s) and the date that the licence vested in you as a personal representative or trustee of the licence holder. This is necessary in order to enable you to subsequently transfer the licence.

'Vesting' is the transfer of responsibility and ownership of a licence when an existing licence holder is no longer able to hold the licence either through death or bankruptcy.

You do not have to complete a form, but you must notify us in writing within 15 months of the date of vesting, giving the full names of all personal representatives or trustees and a contact address.

Time limits

Your licence may be subject to a time limit (stated on the front of your licence). All new abstraction licences are legally required to include a time limit. For variations to licences, time limits are added in accordance with our policy.

The duration of a time limit is determined in accordance with our time limiting policy. The time limit is linked to the next or subsequent review of water resources within a Catchment Abstraction Management Strategy (CAMS).

There will be a presumption of renewal providing three tests are met: environmental sustainability is not in question; there is continued justification of need; and water is being used efficiently. Any application for renewal will still be subject to the normal statutory considerations.

If your licence is time limited and you wish to renew it when it expires, you will need to apply for a new licence to replace the existing one. You are advised to submit this application at least three months before it expires. To allow you to give early consideration to this, we will send you a reminder approximately 18 months before the expiry date.

If your licence cannot be renewed, we will endeavour to give at least six years notice. We will also endeavour to give at least six years notice where the licence is likely to be renewed on different terms and will significantly impact upon the use of the licence.

In exceptional circumstances, for example where there are other overriding statutory duties such as the Habitats Regulations, it may not be possible to provide six years notice.

Charges

Unless specifically exempted, we may levy an annual CHARGE for water AUTHORISED to be abstracted by this licence, in accordance with our abstraction charges scheme in force at the time.

The licence may be revoked if charges are not paid.

Quantity and quality of water

You must not abstract more than the quantity specified in the licence.

The Environment Agency does not, by issue of this licence or otherwise, in any way guarantee that the source of supply will produce the quantity of water authorised to be abstracted by this licence, nor that the water is fit for its intended use.

The quantity of water authorised for abstraction is given in cubic metres. One cubic metre is approximately 220 gallons.

(The precise conversion is 1 cubic metres = 219.969 gallons).

Source of supply and authorised point of abstraction

You may abstract from the point(s) specified in the licence and from no other points. If you want to add or change the authorised point(s) of abstraction, you must apply to us to vary the licence.

Land on which water is authorised to be used

Where this condition applies, you may only use the water you abstract on the area specified in the licence. You must apply to us to vary the licence if you wish to extend or alter this area or remove it.

Purpose for which water is authorised to be used

You may only use the water for the purpose(s) specified in the licence. You must apply to us to vary the licence if you wish to add to or change the purpose(s).

Offences

Under the Water Resources Act 1991 it is an offence:-

- to abstract water, or cause or permit any other person to abstract water, unless the abstraction is authorised by and in accordance with an abstraction licence, or is subject to an exemption;
- to do anything to enable abstraction, or to increase abstraction, except in accordance with an abstraction licence or exemption;
- to fail to comply with the conditions of an abstraction licence.
  Note in particular that it may be a condition of the licence to maintain the meter or other measuring device etc. and failure to do so will be an offence;
- to interfere with a meter or other device which measures quantities of water abstracted so as to prevent it from measuring correctly;
- to fail to provide information which we have reasonably required for the purpose of carrying out any of the Environment Agency's water resources functions;
- to knowingly make false statements for the purpose of obtaining a licence or consent or in giving required information.

The requirement for a licence is subject to some exemptions, set out in the Water Resources Act 1991 as amended. If in any doubt as to whether you need a licence, contact us at the address shown at the bottom of the front page of the licence.

Right of appeal

If you are dissatisfied with our decision on your licence application, you may appeal.

If you are in England, you should write to the Secretary of State for the Environment, Food and Rural Affairs, care of The Planning Inspectorate at:
Room 4/19 Eagle Wing,
Temple Quay House,
2 The Square,
Temple Quay,
Bristol,
BS1 6PN.

If you are in Wales, you should write to The National Assembly for Wales care of The Planning Inspectorate at:
Crown Buildings,
Cathays Park,
Cardiff,
CF10 3NQ.

You must serve notice of appeal within 28 days of the date of receipt of this licence (although the Secretary of State and The National Assembly have power to allow a longer period for serving notice of appeal). See Water Resources Act 1991, section 43.

Disclosure of information

Information about this licence is available in the public Register held by the Environment Agency. Members of the public are also entitled to ask us for other "environmental information" it holds, including any activities likely to affect "the state of any water" or any "activities or other measures designed to protect it". That would include the information additional to the licence document e.g. any related agreement or abstraction returns. In certain restricted circumstances it is possible to claim that information should be kept confidential. If you require more information about keeping this information off the public register because it is confidential, please contact us by writing to the address shown on the front page of the licence within 28 days of receiving this licence.

Licence Serial No:	03/28/50/0097

Please quote the serial number in all correspondence about this licence

FULL LICENCE TO ABSTRACT WATER

The Environment Agency ("the Agency") grants this licence to:-

Aggregate Industries UK Limited ("the Licence Holder")

Bardon Hall
Copt Oak Road
Markfield
Leicestershire
LE67 9PJ

Company registration number: 00245717

This licence authorises the Licence Holder to abstract water from the source of supply described in the Schedule of Conditions to this licence and subject to the provisions of that Schedule. The licence commences from the effective date shown below and shall remain in force until revoked.

Signed [signature]

Gemma House
Team Leader

Environment Agency
Permitting and Support Centre
Water Resources Team
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Date of issue ..... 4 April 2013

Date effective ..... 1 April 2013

Date of original issue..... 14 April 1966
(if this document is a reissue or revision of the licence originally granted for this abstraction)

The licence should be kept safe and its existence disclosed on any sale of the property to which it relates. Please read the 'important notes' on the cover to this licence.

Note: References to "the map" are to the map which forms part of this licence.
References to "the Agency" are to the Environment Agency or any successor body.

Licence Serial No:	03/28/50/0097

SCHEDULE OF CONDITIONS

1. SOURCE OF SUPPLY

1.1 Inland water (River Soar) at Croft Quarry, Croft, Leicestershire.

2. POINT OF ABSTRACTION

2.1 At National Grid Reference SP 51669 95947 marked “A” on the map.

3. MEANS OF ABSTRACTION

3.1 A pump or pumps.

4. PURPOSE OF ABSTRACTION

4.1 Industry other than cooling.

5. PERIOD OF ABSTRACTION

5.1 All year.

6. MAXIMUM QUANTITY OF WATER TO BE ABSTRACTED

6.1

60	cubic metres per hour
873	cubic metres per day
218,208	cubic metres per year

7. MEANS OF MEASUREMENT OF WATER ABSTRACTED

7.1 The Licence Holder shall use a meter to measure quantities of water abstracted . The Licence Holder shall provide and install the meter before any abstraction takes place. The meter shall be maintained in a condition so as to measure quantities of water abstracted accurately and efficiently, and shall be calibrated regularly, in accordance with the recommendations of the manufacturer or at any time when required by the Agency. The Licence Holder shall retain evidence of current certification for inspection by the Agency.

SCHEDULE OF CONDITIONS (continued)

8. RECORDS

8.1 Meter readings shall be recorded and sent to or be made available to the Agency at such intervals and in such a manner as the Agency may from time to time direct.

8.2 Each record shall be kept and be made available during all reasonable hours for inspection by the Agency for a period not less than 7 years.

9. FURTHER CONDITIONS

9.1 Land on which licence authorises use of water:

The area of land at Croft Quarry, Leicestershire shown outlined in red on the map.

ADDITIONAL INFORMATION

Note: the following information is provided for information only. It does not form part of the licence.

REASONS FOR CONDITIONS

To safeguard the downstream aquatic environment and the interests of lawful water users.

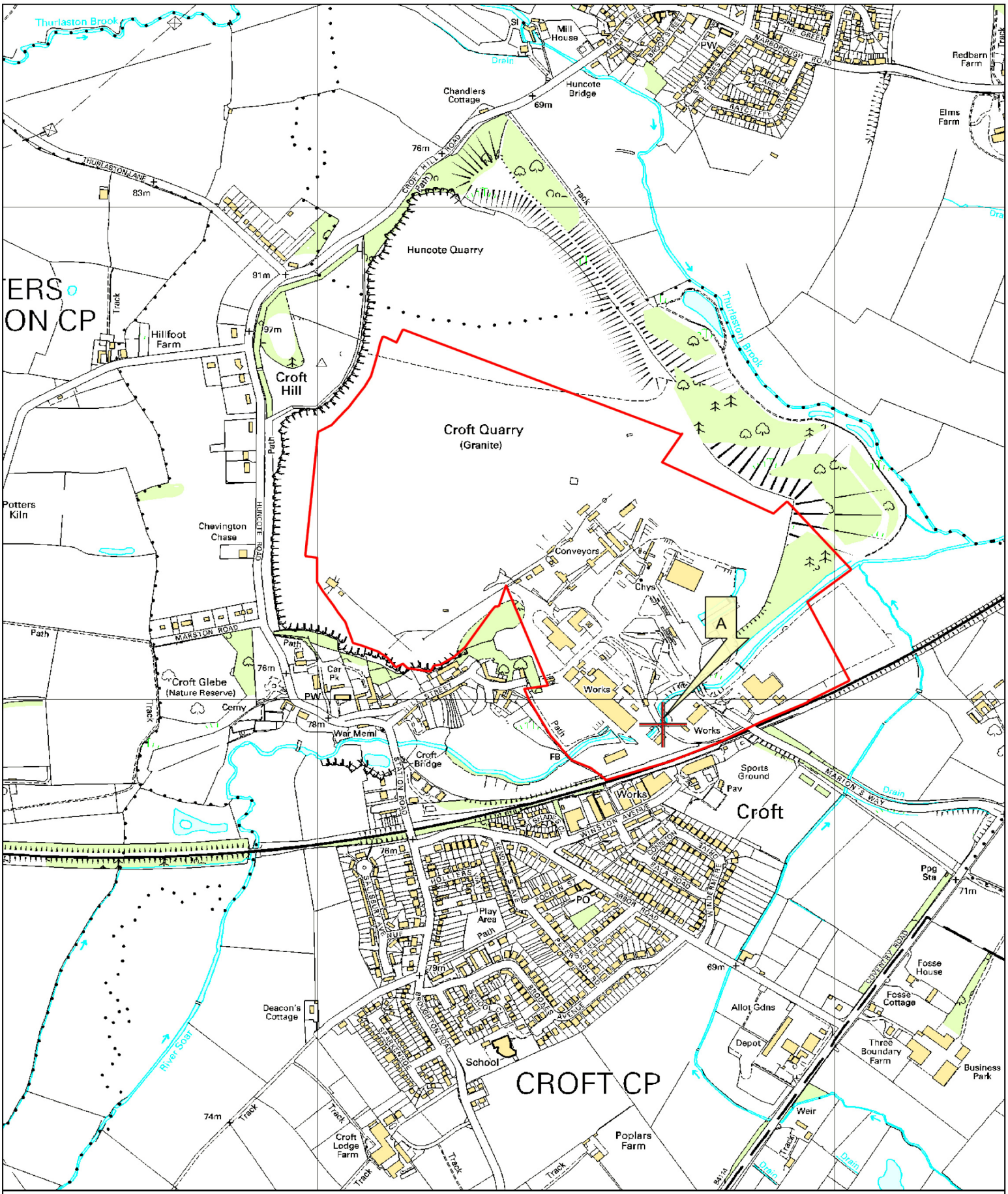
IMPORTANT NOTES

Water efficiency note
The Licence Holder shall use water abstracted under the terms of this licence in an efficient manner. The Agency may have regard to its Guidance on Water Efficiency (or equivalent guidance) in determining whether water is being used efficiently and any measures required to meet this condition. This has been specified in line with the Agency's responsibility under Section 19 (1)(b) of the Water Resources Act 1991 to secure the proper use of water.

Abstraction period details
Note : A day means any period of 24 consecutive hours and a year means the 12 month period beginning on 1 April and ending on 31 March.

Metering
The Agency may have regard to its Abstraction Metering Good Practice Manual or equivalent guidance in directing where the meter should be located or how it should be installed, in determining whether the meter measures accurately and efficiently and is properly maintained and in judging whether it is necessary to require repair or replacement of the meter.

The serial number of this licence was formerly 03/28/50/97/S. We have changed it to 03/28/50/0097 for administrative reasons.



Environment Agency

MAP ACCOMPANYING LICENCE NUMBER 03/28/50/0097

Scale 1:10,000

N

Would you like to find out more about us, or about your environment?

Then call us on
08708 506 506 (Mon-Fri 8-6)

email
enquiries@environment-agency.gov.uk

or visit our website
www.environment-agency.gov.uk

incident hotline 0800 80 70 60 (24hrs)
floodline 0845 988 1188

Environment first: This publication is printed on paper made from 100 per cent previously used waste. By-products from making the pulp and paper are used for composting and fertiliser, for making cement and for generating energy.

Appendix 1

PERMIT REFERENCE:
(EDRM OTHER REFERENCE)

Permit Reference as it appears on the permit including characters (/.-\)

T/50/08259/T

ENVIRONMENT AGENCY

WATER RESOURCES ACT 1991
(AS AMENDED BY THE ENVIRONMENT ACT 1995)
REVOCATION OF CONSENT

TO: Aggregate Industries UK Limited
Bardon Hill
Coalville
Leicestershire

The ENVIRONMENT AGENCY ("The Agency" which expression shall include any statutory successor to The Agency) whose principal office is at Rio House Waterside Drive Aztec West Almondsbury Bristol BS12 4UD in exercise of its powers under the above mentioned Act and of all other powers enabling it in that behalf HEREBY REVOKES THAT PART OF Consent number WQ/7/1259, (subsequently renumbered as T/50/08259/T) that relates to outlet 7, issued to Land and Properties (E.C.C.) Limited on 3 December 1980 by the Severn-Trent Water Authority in respect of the discharge of Trade Effluent consisting of quarry water, wash water from the main vehicle wash, drainage from the Spun Pipe Department, effluent from the dust arrestor of the Coating Plant, stone washing effluent, wash water from the Ready Mixed Concrete Plant and site drainage including drainage from the Block and Compacted Pipe Department to the River Soar from Croft Quarry, Croft, Leicestershire.

Dated this FIFTH day of JANUARY 2000.

Team Leader - Water Quality Consenting

The Environment Agency
Lower Trent Area
Trentside Offices
Scarrington Road
West Bridgford
Nottingham NG2 5FA

Water Resources Act 1991

(as amended by the Environment Act 1995)

Consents to Discharge
Certificate of Holder

Part A

To: Aggregate Industries UK Limited
Bardon Hill
Coalville
Leicestershire
LE67 1TL

Environment Act 1995 Schedule 23

Date of Letter 05 OCT 1998

Date to DCRS.....

Date Filed.....

The **Environment Agency** ("the Agency") hereby confirm that the above named person(s) or body corporate is and has been since 11 September 1998 the registered holder of consent T/50/08259/T.

Nature of Discharge(s); Trade Effluent
at Croft Quarry, Croft, Leicestershire

Note: This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else you must pass the consent to them and tell the Agency within 21 days. **Responsibility for the consent cannot be disclaimed by the holder but the registration of holder may be transferred to a successor.** To do this please complete the form below, then tear it off and return to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you may still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries please contact your local Environment Agency office.

Part B **Please complete in block capitals or type.**

To: The Environment Agency, Water Quality Section (Consents), Olton Court, 10 Warwick Road, Olton, Solihull B92 7HX

Water Resources Act 1991: Notice of transfer of consent to discharge

Consent T/50/08259/T

Name: Aggregate Industries UK Limited
Address: Bardon Hill
Coalville
Leicestershire
LE67 1TL

I/We* hereby serve notice on the Agency and I/we* am/are* no longer a/the* Holder of the above consent which will be/was* transferred to: * delete as appropriate

Name(s) of new holder(s):
Address:

Post Code:

Date of Transfer to New Holder(s): . . . . . .

Signed: . . . . . **Dated:** . . . . . .

Name (block capitals): . . . . . **Position:** . . . . . .

(to be completed when signing on behalf of corporate bodies)

Lee, Transfer for you! - KB

14 SEP 1998

Our Ref: 8104/2/MAS/46

Your Ref: T/50/45029/T, T/50/08259/T

BARDON
AGGREGATES

A Buck Esq.
Water Resources Department
The Environment Agency
Trentside Offices
Scarrington Road
West Bridgford
NG2 5FA
Nottingham

ENVIRONMENT AGENCY
RECEIVED
11 SEP 1998
10
MIDLANDS REGION

Dear Mr Buck.

Abstraction Licences at Croft Quarry, Leicestershire

Thank you for your letter dated 17 August 1998 with enclosed abstraction licences duly amended in the form of re-issued documents (abstraction licences 3/28/50/97/S and 3/28/50/98/S.

I would be grateful if you could also amend your records and public register in respect of the two extant discharge consents at Croft Quarry, namely;

(i) Discharge Licence Ref. T/50/45029/T (Dated 25/07/1996)
(ii) Discharge Licence Ref. T/50/08259/T (Dated 03/12/1980)

As previously advised the Company name is **Aggregate Industries UK Limited** whose registered office is **Bardon Hill, Coalville, Leicestershire, LE67 1TL.**

Thanking you in anticipation.

Yours sincerely

John Penny
Estates Surveyor – Midlands Region

BARDON AGGREGATES
NORTHERN DIVISION

ENVIRONMENT AGENCY

WATER RESOURCES ACT 1991
(AS AMENDED BY THE ENVIRONMENT ACT 1995)
REVOCATION OF CONSENT

TO: CAMAS Building Materials Limited
Regent House
Rodney Road
Cheltenham
Gloucestershire

The ENVIRONMENT AGENCY ("The Agency" which expression shall include any statutory successor to The Agency) whose principal office is at Rivers House Waterside Drive Aztec West Almondsbury Bristol BS12 4UD in exercise of its powers under the above mentioned Act and of all other powers enabling it in that behalf HEREBY REVOKES those parts of Consent No WQ/7/1259 which refer to Outlet No. 4 issued to Land and Properties (E.C.C.) Limited on 3 December 1980 by the Severn Trent Water Authority in respect of the discharge of trade effluent from the concrete settlement pit to the River Soar from Croft Quarry, Croft, Leicestershire.

Dated this Twenty fifth day of July 1996

Area Water Quality Manager

The Environment Agency
Lower Trent Area
Trentside Offices
Scarrington Road
West Bridgford
Nottingham NG2 5FA

Water Resources Act 1991
as amended by the Environment Act 1995
Consents to Discharge
Certificate of Holder

ENVIRONMENT AGENCY

Part A

To: Camas UK Limited
Regent House
Rodney Road
Cheltenham
Gloucestershire
GL50 1HX

Environment Act 1995 Schedule 23

Date of Letter: - 6 DEC 1996

Date to DCRS: .....

Date Filed: .....

The **Environment Agency** ("the Agency") hereby confirm that the above named person is a/the registered holder of consent T/50/08259/T

Nature of Discharge(s); Trade Effluent
at Croft Quarry/Croft/Leicestershire///

Note: This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else you must pass the consent to them and tell the Agency within 21 days. **Responsibility for the consent cannot be disclaimed by the holder but the registration of holder may be transferred to a successor.** To do this please complete the form below, then tear it off and return it to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you may still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries please contact your local Environment Agency office.

Part B **Please complete in block capitals or type.**

To: The Environment Agency, Water Quality Section (Consents), Olton Court, 10 Warwick Road, Olton, Solihull B92 7HX

Water Resources Act 1991: Notice of transfer of consent to discharge

Consent T/50/08259/T

Name: Camas UK Limited
Address: Regent House
Rodney Road
Cheltenham
Gloucestershire
GL50 1HX

I/We* hereby serve notice on the Agency that I/we* am/are* no longer a/the* Holder of the above consent which will be/was* transferred to: * delete as appropriate

Name(s) of new holder(s): .....

Address: .....

.....

.....

Post Code: .....

Date of Transfer to new Holder(s); .....

Signed:..... **Dated:**.....

Name (block capitals):..... **Position:**.....
(to be completed when signing on behalf of corporate bodies)

RECYCLED

NRA

WATER RESOURCES ACT 1991

REVOCATION OF CONSENT

TO: CAMAS Building Materials Limited
Regent House
Rodney Road
Cheltenham
Gloucestershire

The NATIONAL RIVERS AUTHORITY ("The Authority" which expression shall include any statutory successor to The Authority) whose principal office is at Rivers House Waterside Drive Aztec West Almondsbury Bristol BS12 4UD in exercise of its powers under the above mentioned Act and of all other powers enabling it in that behalf HEREBY REVOKES those parts of Consent No. WQ/7/1259 which refer to outlets 2,3,5 and 6 issued to Land and Properties (E.E.C) Limited on 3 December 1980 by Severn Trent Water Authortity in respect of the discharge of trade effluents to the River Soar at the Company's Croft Works, Huncote Road, Croft, Leicestershire.

Dated this Seventeenth day of October 1995

Area Manager
AHSR

National Rivers Authority
Severn-Trent Region
Trentside Offices
Scarrington Road
West Bridgford
Nottingham NG2 5FA

WATER ACT 1989 - SCHEDULE 12

Change of Consent Holder

Consent No. T|SO|14418|SG
T|SO|08259|T (formerly Consent No.)

With effect from 1|6|94 the person making the discharge authorised by the above consent is:

Camas UK Ltd
Greystones
Huncote Road
Croft
Leicester LE9 3GT

Previous Consent Holder (name) ECC Quarries

Site Address

Croft Quarry

Contact (Name and Address if different from above).

Date 18|7|94 Signed D. Rees

creg.178

SEVERN-TRENT WATER AUTHORITY

Water Act, 1973
Rivers (Prevention of Pollution) Acts, 1951-61

NOTIFICATION OF CONSENT

for Effluent Outlet and/or Discharge of Effluent to a Stream

T/50/08259/T

Reference : [illegible] 20/7/73 Consent No. : [illegible]

To : [illegible]

THE SEVERN-TRENT WATER AUTHORITY in pursuance of the powers conferred on them by the above-mentioned Acts HEREBY CONSENT to your
bringing into use ~~new~~ outlet(s) for the discharge of effluent to a stream
beginning to make 7 new discharge(s) of effluent to a stream
continuing to make ~~discharge(s)~~ of effluent to a stream
as described below, the subject of your application dated 4 September 19[illegible]

SUBJECT to the conditions attached.

Description of outlet(s)

See Page 2 attached

Description of effluent(s)

See [illegible] attached

Dated this [illegible] day of December 19[illegible]

ABELSON HOUSE,
2297 COVENTRY ROAD,
SHELDON,
BIRMINGHAM.

Director of Scientific Services

ST.1406

Consent No. : NQ/7/1259

CONDITIONS ATTACHED TO CONSENT

DESCRIPTION OF OUTLETS

Outlet No. 1

Outlet to the River Soar as shown marked "(1)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5153 9512.

Outlet No. 2 — Revoked - 17/10/95

Outlet to the River Soar as shown marked "(2)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5165 9593.

Outlet No. 3 — Revoked - 17/10/95

Outlet to the River Soar as shown marked "(3)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5163 9594.

Outlet No. 4 — Revoked 25.7.96.

Outlet to the River Soar as shown marked "(4)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5160 9601.

Outlet No. 5 — Revoked 17/10/95

Outlet to the River Soar as shown marked "(5)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5163 9603.

Outlet No. 6 — Revoked 17/10/95

Outlet to the River Soar as shown marked "(6)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5163 9609.

Outlet No. 7 — Revoked 5/1/01

Outlet to the River Soar as shown marked "(7)" on Drawing No. NQ/7/1259/1 and located within O S National Grid Square SP 5207 9520.

A copy of the drawing referred to in this Consent is annexed hereto.

Consent No. : [illegible]

CONDITIONS ATTACHED TO CONSENT

DISCHARGE OF TRADE EFFLUENT

Outlet No. 1

New discharge of trade effluent consisting of compressor cooling water, quarry water, wash water from the secondary vehicle wash and site drainage from the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 2 - Revoked - 17/10/95

New discharge of trade effluent consisting of the discharge from the Mess House Settlement Pit at the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 3 - Revoked - 17/10/95

New discharge of trade effluent consisting of the discharge from the Mess House Settlement Pit at the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 4 - Revoked - 26/7/96

New discharge of trade effluent consisting of the discharge from the Concrete Kerb Department Settlement Pit at the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 5 - Revoked - 17/10/95

New discharge of trade effluent consisting of cooling water from the Refinement Department at the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 6 - Revoked - 17/10/95

New discharge of trade effluent consisting of concrete pipe test water and boiler blowdown at the Company's Croft Quarry, Croft, Leicestershire.

Outlet No. 7 - Revoked 5/1/01

New discharge of trade effluent consisting of quarry water, wash water from the main vehicle wash, drainage from the Spun Pipe Department, effluent from the dust arrestor of the Coating Plant, stone washing effluent, wash water from the Ready Mixed Concrete Plant, and site drainage including drainage from the Mixed and Compacted Pipe Department at the Company's Croft Quarry, Croft, Leicestershire.

Consent No. : [illegible]

CONDITIONS ATTACHED TO CONSENT

Outlet No. 1

The effluent discharged to the stream shall not:-

(a) have a Biochemical Oxygen Demand, determined in the presence of .5 milligram per litre of allyl thiourea in 5 days at 20°C, in excess of 20 milligrams per litre,

(b) contain Suspended Solids, dried at 105°C, in excess of 50 milligrams per litre,

(c) contain mineral oils and hydrocarbons in excess of 5 milligrams per litre.

Outlet No. 2

1 The effluent discharged to the stream shall not contain Suspended Solids, dried at 105°C, in excess of 100 milligrams per litre.

2 The volume of effluent discharged to the stream shall not exceed 3500 litres per day.

Outlets Nos. 3 and 4

1 The effluent discharged to the stream shall not:-

(a) contain Suspended Solids, dried at 105°C, in excess of 100 milligrams per litre,

(b) contain Chromium in excess of 3 milligrams per litre.

2 The volume of effluent discharged to the stream shall not exceed 46 cubic metres per day.

Outlets Nos. 5 and 6

1 The effluent discharged to the stream shall not contain Suspended Solids, dried at 105°C, in excess of 100 milligrams per litre.

2 The volume of effluent discharged to the stream shall not exceed 4600 litres per day.

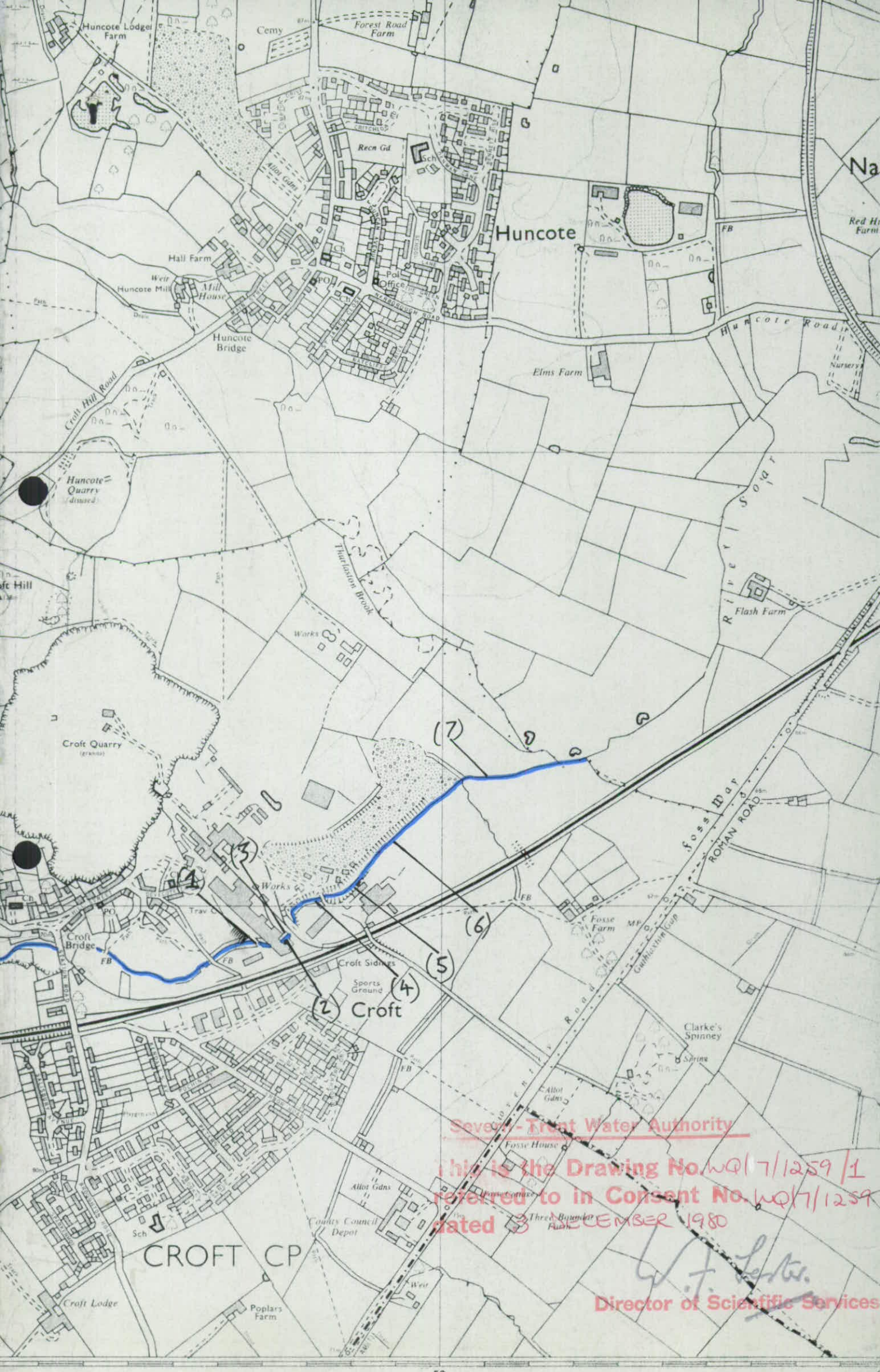
Outlet No. 7

Revoked 5/1/01

1 The effluent discharged to the stream shall not contain Suspended Solids, dried at 105°C, in excess of 100 milligrams per litre.

2 The volume of effluent discharged to the stream shall not exceed 4546 cubic metres per day.

The terms of this Consent will not, without the consent in writing of the person to whom this Consent is given (or his successor), be altered before the expiration of the period ending with the third day of December 1981.



Severn-Trent Water Authority
This is the Drawing No. WQ/7/1259/1
referred to in Consent No. WQ/7/1259
dated 3 DECEMBER 1980
W. F. Locke.
Director of Scientific Services

Copies sent to Engineer.
C.P.F.O.

C.../5614. 11.NOV.1958

ENGINEERING
Receipt on 11/22/1

Dear Sir,

Section 7: Rivers (Prevention of Pollution) Act, 1951
New Boiler House - Croft.

With reference to my letter of the 25th October, 1958 herein, I now have to say that, from the pollution and fishery aspects, my Board grant consent, under Section 7 of the above Act, to your Company to bring into use a new outlet to the River Soar to discharge trade effluent from the new Boiler House belonging to your Company at Croft, Leicestershire, as shown on Drawing No. 1/512/4 submitted and marked " 6" Overflow Pipe" thereon and located at a point within O.S. National Grid Reference SP.516959, subject to the eventual effluent complying with the following Conditions:-

The effluent to be discharged shall not:-

1. have a Permanganate Value (4 hours) exceeding twenty parts per million;

2. have a B.O.D. (5 day) exceeding twenty parts per million;

3. contain solids in suspension in excess of thirty parts per million by weight;

4. have a pH value less than five nor more than nine in the recognised scale;

5. (a) include arsenic, cadmium chromium, copper, lead, nickel or zinc, either individually or in total in excess of one part per million by weight;

(b) include free chlorine in excess of one part per million by weight;

(c) include cyanide (CN) in excess of one part per million by weight;

6. have a temperature in excess of 43°C;

7. be made at a greater rate than 200 gallons per minute nor exceed 400 gallons in total volume in any one day;

Notes:- The analytical tests used for determination of the above-named conditions shall be carried out in accordance with the Ministry of Housing and Local Government publication, "Methods of Chemical Analysis as applied to Sewage and Sewage Effluents, 1956" and/or "Recommended

"Methods for the Analysis of Trade Effluents" published for the Society of Analytical Chemistry by W. Hoffer and Sons Ltd., 1950.

My Board's Chief Pollution and Fisheries Officer tells me that satisfactory facilities will be available for sampling of the effluent.

With regard to the discharge of surface water to the River Soar through an outlet located at a point within O.S. National Grid Reference SP.516959, and also shown on the Drawing submitted, I now have to say that My Board offer no objection to the proposal provided that precautions are taken to avoid access to the River Soar, by such discharge of matter of trade or industrial origin. In the event of such discharge causing pollution of the River Soar, My Board will call upon the Croft Granite, Brick and Concrete Co. Ltd. to remove or to remove therefrom such polluting matter.

My Board offer no objection to the proposal from the land drainage aspect.

Will you please note that this Consent does not absolve you from obtaining the Consents of any other persons or bodies which may be necessary.

I shall be obliged if you will acknowledge receipt of this letter.

Yours faithfully,

Clerk of the Board.

W. C. Miller, Esq.,
Chief Draughtsman,
The Croft Granite, Brick & Concrete Co. Ltd.,
CROFT,
Nr. Leicester.

WATER TREATMENT PLANT OUTLET T/50/45029/T.

Water Resources Act 1991

(as amended by the Environment Act 1995)

Consents to Discharge
Certificate of Holder

Part A

Environment Act 1995 Schedule 23

To: Aggregate Industries UK Limited
Bardon Hill
Coalville
Leicestershire
LE67 1TL

Date of Letter 05 OCT 1998

Date to DCRS

Date Filed

The **Environment Agency** ("the Agency") hereby confirm that the above named person(s) or body corporate is and has been since 11 September 1998 the registered holder of consent T/50/45029/T.

Nature of Discharge(s); Trade Effluent
at Croft Quarry, Croft, Leicestershire

Note: This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else you must pass the consent to them and tell the Agency within 21 days. **Responsibility for the consent cannot be disclaimed by the holder but the registration of holder may be transferred to a successor.** To do this please complete the form below, then tear it off and return to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you may still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries please contact your local Environment Agency office.

Part B **Please complete in block capitals or type.**

To: The Environment Agency, Water Quality Section (Consents), Olton Court, 10 Warwick Road, Olton, Solihull B92 7HX

Water Resources Act 1991: Notice of transfer of consent to discharge

Consent T/50/45029/T

Name: Aggregate Industries UK Limited
Address: Bardon Hill
Coalville
Leicestershire
LE67 1TL

I/We* hereby serve notice on the Agency and I/we* am/are* no longer a/the* Holder of the above consent which will be/was* transferred to: * delete as appropriate

Name(s) of new holder(s):
Address:

Post Code:

Date of Transfer to New Holder(s): . . . . . .

Signed: . . . . . **Dated:** . . . . . .

Name (block capitals): . . . . . **Position:** . . . . . .

(to be completed when signing on behalf of corporate bodies)

ENVIRONMENT AGENCY

CONSENT NO.	T/50/45029/T

WATER RESOURCES ACT 1991
(AS AMENDED BY THE ENVIRONMENT ACT 1995)
SECTION 88 - SCHEDULE 10
CONSENT TO DISCHARGE

TO: CAMAS UK Limited
Regent house
Rodney Road
Cheltenham
Gloucestershire

WATER ACT 1991 - SECTION 190 (As Amended By The Environment Act 1995)	
DATE OF ENTRY ONTO REGISTER	30 JUL 1996

The **ENVIRONMENT AGENCY** ("The Agency") in pursuance of its powers under the Water Resources Act 1991 **HEREBY CONSENTS** to the making of a discharge of **TRADE EFFLUENT**, as follows:

Site Drainage, Process Wash Waters and Quarry Water

FROM: Croft Quarry

AT: Croft, Leicestershire

TO: The River Soar

SUBJECT TO the conditions set out in the following schedules:

Site Drainage, Process Wash Waters and Quarry Water — Schedule No. T/50/45029/T 01

Subject to the provisions of Schedule 10 of the Water Resources Act 1991, no notice shall be served by the Agency, altering this consent without the agreement in writing of the discharger, during a period of 2 years from the date this consent takes effect or such later date as may be specified in an endorsement to this document.

This consent is issued and takes effect on the Twenty fifth day of July 1996

Signed .....
Area Water Quality Manager

The Environment Agency, Lower Trent Area,
Trentside Offices, Scarrington Road, West Bridgford, Nottingham NG2 5FA

CONSENT NO.	T/50/45029/T
SCHEDULE NO.	T/50/45029/T 01
DATE ISSUED	25 JUL 1996

CONDITIONS OF CONSENT TO DISCHARGE

TRADE EFFLUENT ("the discharge")

FROM: CROFT QUARRY, CROFT, LEICESTERSHIRE

1 (a) The Discharge shall not contain any poisonous, noxious, or polluting matter or solid waste matter.

(b) Provided that the Discharge hereby consented is made in accordance with the following conditions of this consent, such discharge shall not be taken to be in breach of condition (a) above by reason of containing substances or having properties identified in and controlled by these conditions.

2 The Discharge shall consist solely of site drainage, process wash waters and quarry water either separately or in admixture.

3 The Discharge shall be made in the manner and at the place specified as:

(a) discharging to River Soar

(b) at National Grid Reference SP 5182 9608

(c) shown marked "OUTLET" on attached Drawing No. T/50/45029/T/D.

4 The outlet to the watercourse shall be constructed and maintained so that a representative sample of the Discharge may be obtained at National Grid Reference SP 5182 9608 as shown marked "OUTLET" on attached Drawing No. T/50/45029/T/D.

5 The volume of the Discharge shall not exceed 4,320 cubic metres per day.

6 The rate of discharge shall not exceed 50.0 litres per second.

7 The composition of the Discharge shall be such that:

(a) suspended solids, dried at 105 degrees Celsius, shall not exceed 30 milligrams per litre.

(b) the pH value shall not be less than 5 nor greater than 9.

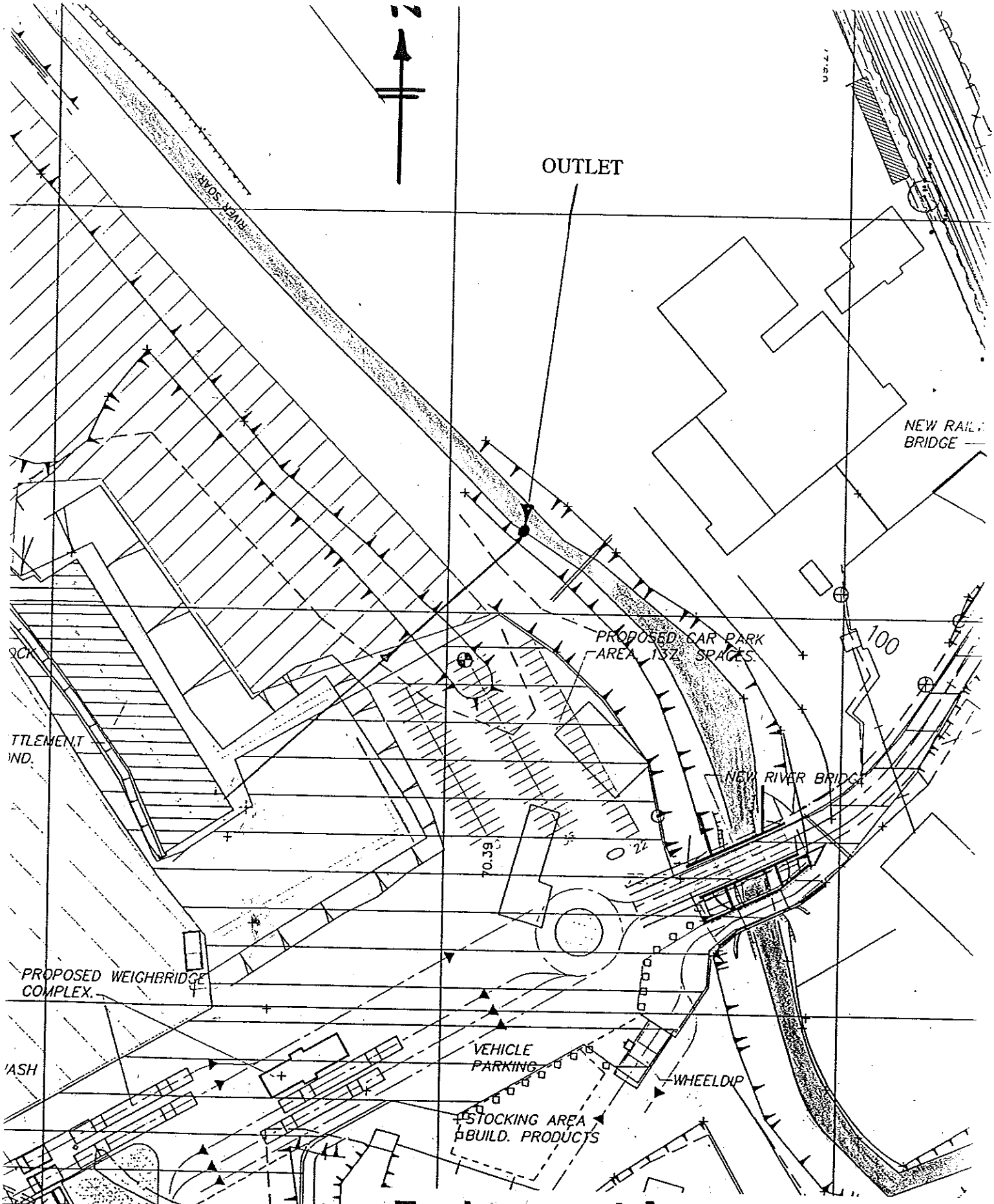
(c) mineral oils and hydrocarbons shall not exceed 5 milligrams per litre.

SCHEDULE NO.	T/50/45029/T 01

8 As far as is reasonably practicable, the Discharge shall not contain any matter, other than matter specifically covered by numerical conditions in this consent, to such an extent as to cause the receiving waters, or any waters of which the receiving waters are a tributary, to be poisonous or injurious to fish in those waters, or to the spawning grounds, spawn or food of fish in those waters, or otherwise cause damage to the ecology of those waters or to have any other adverse environmental impact.

Dated this twenty fifth day of July 1996

Area Water Quality Manager



Environment Agency

This is the Drawing No. T/50/45029/T/D
referred to in Consent No. T/50/45029/T
dated 25 July 1996

APPENDIX ESSD5
Groundwater Level Data
(Refer to Spreadsheet File Ref.: AI1009_07_A5)

APPENDIX ESSD6
Quarry Water Balance

Aggregate Industries UK Ltd, Croft Quarry: Mass Balance Estimate of Groundwater Ingress Rate											
Quarry Void Catchment (m^2)	387,500	**Area of Lowest Sinking** (m^2)	10,155	**Assumed Depth of Quarry Floor Fill** (m)	2	**Assumed Porosity of Quarry Floor Fill** (%)	20%				
Source / Notes	Site Gauge Data	Derived using Grindley Proceedure	RF and Catchment Area	eRF and Catchment Area	"6,000K" Site Meter Readings	Implied Groundwater ingress assuming co-ingress is RF	Implied Groundwater ingress assuming co-ingress is eRF	Implied Change In Water Storage Vol. & Level held in base of quarry void assuming co-ingress is RF and Groundwater ingress is made at the average rate implied for the period of the water balance		Implied Change In Water Storage Vol. & Level held in base of quarry void assuming co-ingress is eRF and Groundwater ingress is made at the average rate implied for the period of the water balance	
Month /Year	**Rainfall (RF)** (mm)	**Effective Rainfall (eRF)** (mm)	**RF Volume** (m^3)	**eRF Volume** (m^3)	**Pumped from Quarry Void** (m^3)	**Balance (RF input)** (m^3)	**Balance (eRF input)** (m^3)	**Implied Change In Storage during Month (RF)** (m^3)	**Implied Change In Level during Month (RF)** (m)	**Implied Change In Storage during Month (eRF)** (m^3)	**Implied Change In Level during Month (eRF)** (m)
Apr-16	68.6	13.6	26,583	5,270	63,539	36,957	58,269	-16,213	-1.1	-26,825	-1.9
May-16	28.2	0.0	10,928	0	48,488	37,560	48,488	-16,817	-1.2	-17,044	-1.2
Jun-16	27.8	0.0	10,773	0	41,814	31,041	41,814	-10,298	-0.7	-10,370	-0.7
Jul-16	80.8	0.0	31,310	0	40,318	9,008	40,318	11,736	0.8	-8,874	-0.6
Aug-16	19.8	0.0	7,673	0	34,108	26,435	34,108	-5,692	-0.4	-2,664	-0.2
Sep-16	37.6	0.0	14,570	0	31,539	16,969	31,539	3,774	0.3	-95	0.0
Oct-16	30.8	0.0	11,935	0	33,213	21,278	33,213	-535	0.0	-1,769	-0.1
Nov-16	22.8	0.0	8,835	0	56,424	47,589	56,424	-26,846	-1.9	-24,980	-1.8
Dec-16	82	82.0	31,775	31,775	33,902	2,127	2,127	18,616	1.3	29,317	2.1
Jan-17	18.6	17.6	7,208	6,820	17,894	10,686	11,074	10,057	0.7	20,370	1.4
Feb-17	49.4	40.4	19,143	15,655	32,719	13,577	17,064	7,167	0.5	14,380	1.0
Mar-17	41.6	12.6	16,120	4,883	20,621	4,501	15,739	16,243	1.1	15,706	1.1
Apr-17	37	0.0	14,338	0	24,047	9,710	24,047	11,034	0.8	7,397	0.5
May-17	7.8	0.0	3,023	0	25,993	22,970	25,993	-2,227	0	5,451	0.4

APPENDIX ESSD7
Groundwater Quality Datasets
(Refer to Spreadsheet File Ref.: AI1009_07_A7)

APPENDIX ESSD8
List of Wastes

Table ESSDA8.1: Permitted waste types accepted for restoration fill materials

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
01 Waste resulting from exploration, mining, quarrying and physical and chemical treatment of minerals	01 01 wastes from mineral excavation	01 01 02	Wastes from mineral non-metalliferous excavation	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings.
	01 04 wastes from physical and chemical processing of non-metalliferous minerals	01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 06	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone.
		01 04 09	Waste sand and clays	**Group 1 – Rocks and Soils**: Naturally occurring clay & sand.
		01 04 12	Tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. **Group 3 – Minerals, processed or prepared:** Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Excluding moulding sands containing organic binders; man-made mineral fibres from glass-reinforced plastics and asbestos.
		01 04 13	Waste from stone cutting and sawing other than those mentioned in 01 04 07	
10 Wastes from thermal processes	10 01 wastes from power stations and other combustion plants (except 19)	10 01 01	Bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)	**Group 5 – Ash:** Comprising only bottom ash and fly ash produced only from the combustion of wood, of waste or of both; bottom ash and fly ash from the combustion of coal, petroleum coke or of both, deposited in a cell containing the product or that combustion alone; and bottom ash and fly ash from the combustion of coal, petroleum coke or both, burnt together with biomass and deposited in a cell containing the product of that combustion burning alone. Excluding fly ash from sewerage sludge, municipal, clinical and hazardous waste incinerators.
		10 01 02	Coal fly ash	

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
	10 08 wastes from other non-ferrous thermal metallurgy	10 08 09	Other slags	**Group 4 – Furnace Slags:** Vitrified wastes and residues from thermal processing of minerals where, in either case, the residue is both fused and insoluble and slag from waste incineration.
	10 11 waste from the manufacture of glass and glass products	10 11 12	Waste glass other than those mentioned in 10 11 11	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
	10 12 wastes from manufacture of ceramic goods, bricks, tiles and construction products	10 12 06	Discarded moulds	**Group 3 – Minerals, processed or prepared:** Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Excluding moulding sands containing organic binders; man-made mineral fibres from glass-reinforced plastics and asbestos.
		10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)	**Group 2 – Ceramics or Concrete Materials:** Comprising only of: Glass, including fritted enamel; Ceramics, including bricks, bricks and mortar, tiles, clay ware, pottery, china and refractories; Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings
	10 13 waste from manufacture of cement, lime and plaster and articles and products made from them	10 13 14	Waste concrete and concrete sludge	**Group 2 – Ceramics or Concrete Materials:** Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings. Excluding sludges and liquids.

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
15 Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise stated	15 01 packaging (including separately collected municipal packaging waste)	15 01 07	Glass packaging	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
16 Wastes not otherwise specified in the list	16 01 end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)	16 01 20	Glass	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
17 Construction and demolition wastes	17 01 concrete, bricks, tiles and ceramics	17 01 01	Concrete	**Group 2 – Ceramics or Concrete Materials:** Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
		17 01 02	Bricks	**Group 2 – Ceramics or Concrete Materials:** Ceramics, including bricks, bricks and mortar. Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
		17 01 03	Tiles and ceramics	**Group 2 – Ceramics or Concrete Materials:** Ceramics, tiles, clay ware, pottery, china and refractories. Excluding glass fibre and glass-reinforced plastic and concrete plant washings.

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
		17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Ceramics, including bricks, bricks and mortar tiles, clay ware, pottery, china and refractories. Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
	17 02	17 02 02	Glass	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
	17 05 soil stones and dredging spoil	17 05 04	Soil and stones other than those mentioned in 17 05 03	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. ***Including component of the following groups*** **Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Ceramics, including bricks, bricks and mortar tiles, clay ware, pottery, china and refractories; Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings. **Group 3 – Minerals, processed or prepared:** Moulding sands, including used foundry sand; Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Mineral absorbents; Man-made mineral fibres, including glass fibres; Silica; Mica; Mineral abrasives; Excluding moulding sands containing organic binders; man-made mineral fibres made from glass-reinforced plastic and asbestos.

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
				Group 4 – Furnace Slags: Vitrified wastes and residues from thermal processing of minerals where, in either case, the residue is both fused and insoluble and slag from waste incineration. **Group 5 – Ash:** Comprising only bottom ash and fly ash produced only from the combustion of wood, of waste or of both; bottom ash and fly ash from the combustion of coal, petroleum coke or of both, deposited in a cell containing the product or that combustion alone; and bottom ash and fly ash from the combustion of coal, petroleum coke or both, burnt together with biomass and deposited in a cell containing the product of that combustion burning alone. Excluding fly ash from sewerage sludge, municipal, clinical and hazardous waste incinerators.
		17 05 06	Dredging spoil other than those mentioned in 17 05 05	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings.
		17 05 08	Track ballast other than those mentioned in 17 05 07	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone.
	17 09 other construction and demolition wastes	17 09 04	Mixed construction and demolition wastes other than those listed in 17 09 01, 17 09 02 and 17 09 03	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. ***Including component of the following groups*** **Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Ceramics, including bricks, bricks and mortar tiles, clay ware, pottery, china and refractories; Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings.

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
				Group 3 – Minerals, processed or prepared: Moulding sands, including used foundry sand; Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Mineral absorbents; Man-made mineral fibres, including glass fibres; Silica; Mica; Mineral abrasives; Excluding moulding sands containing organic binders; man-made mineral fibres made from glass-reinforced plastic and asbestos. **Group 4 – Furnace Slags:** Vitrified wastes and residues from thermal processing of minerals where, in either case, the residue is both fused and insoluble and slag from waste incineration. **Group 5 – Ash:** Comprising only bottom ash and fly ash produced only from the combustion of wood, of waste or of both; bottom ash and fly ash from the combustion of coal, petroleum coke or of both, deposited in a cell containing the product or that combustion alone; and bottom ash and fly ash from the combustion of coal, petroleum coke or both, burnt together with biomass and deposited in a cell containing the product of that combustion burning alone. Excluding fly ash from sewerage sludge, municipal, clinical and hazardous waste incinerators.
19 Wastes from waste management facilities	19 01 wastes from the incineration or pyrolysis of waste	19 01 12	Bottom ash and slag other than those mentioned in 19 01 11	**Group 5 – Ash:** Comprising only bottom ash and fly ash produced only from the combustion of wood, of waste or of both; bottom ash and fly ash from the combustion of coal, petroleum coke or of both, deposited in a cell containing the product or that combustion alone; and bottom ash and fly ash from the combustion of coal, petroleum coke or both, burnt together with biomass and deposited in a cell containing the product of that combustion burning alone. Excluding fly ash from sewerage sludge, municipal, clinical and hazardous waste incinerators.

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
	19 12 wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	19 12 05	Glass	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
		19 12 09	Minerals (for example sand, stones)	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. **Group 3 – Minerals, processed or prepared:** Moulding sands, including used foundry sand; Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Mineral absorbents; Man-made mineral fibres, including glass fibres; Silica; Mica; Mineral abrasives; Excluding moulding sands containing organic binders; man-made mineral fibres made from glass-reinforced plastic and asbestos.
		19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. ***Including component of the following groups*** **Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Ceramics, including bricks, bricks and mortar tiles, clay ware, pottery, china and refractories; Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings. **Group 3 – Minerals, processed or prepared:**

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
				Moulding sands, including used foundry sand; Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Mineral absorbents; Man-made mineral fibres, including glass fibres; Silica; Mica; Mineral abrasives; Excluding moulding sands containing organic binders; man-made mineral fibres made from glass-reinforced plastic and asbestos. **Group 4 – Furnace Slags:** Vitrified wastes and residues from thermal processing of minerals where, in either case, the residue is both fused and insoluble and slag from waste incineration. **Group 5 – Ash:** Comprising only bottom ash and fly ash produced only from the combustion of wood, of waste or of both; bottom ash and fly ash from the combustion of coal, petroleum coke or of both, deposited in a cell containing the product or that combustion alone; and bottom ash and fly ash from the combustion of coal, petroleum coke or both, burnt together with biomass and deposited in a cell containing the product of that combustion burning alone. Excluding fly ash from sewerage sludge, municipal, clinical and hazardous waste incinerators.
	19 13 waste from soil and groundwater remediation	19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings. ***Including component of the following groups*** **Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Ceramics, including bricks, bricks and mortar tiles, clay ware, pottery, china and refractories; Concrete, including reinforced concrete, concrete blocks, breeze blocks and aircrete blocks. Excluding glass fibre and glass-reinforced plastic and concrete plant washings. **Group 3 – Minerals, processed or prepared:**

Source	Sub-source	Waste code	Description	Qualifying Material Order 2011 (as amended) - Group and most likely suitable descriptions
				Moulding sands, including used foundry sand; Clays, including moulding clay absorbents (including Fuller's Earth and Bentonite); Mineral absorbents; Man-made mineral fibres, including glass fibres; Silica; Mica; Mineral abrasives; Excluding moulding sands containing organic binders; man-made mineral fibres made from glass-reinforced plastic and asbestos. **Group 4 – Furnace Slags:** Vitrified wastes and residues from thermal processing of minerals where, in either case, the residue is both fused and insoluble and slag from waste incineration.
20 Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	20 01 separately collected fractions (except 15 01)	20 01 02	Glass	**Group 2 – Ceramics or Concrete Materials:** Glass including fritted enamel; Excluding glass fibre and glass-reinforced plastic and concrete plant washings.
	20 02 garden and park wastes	20 02 02	Soil and stones	**Group 1 – Rocks and Soils**: Naturally occurring rock, clay, sand, gravel, sandstone, limestone, crushed stone, stone from demolition of buildings or structures, slate, sub-soil, silt and dredgings.

Table ESSDA8.2: Permitted waste types for construction of engineered lining systems

01	**WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**
01 01	**wastes from mineral excavation**
01 01 02	wastes from mineral non-metalliferous excavation
01 04	**wastes from physical and chemical processing of non-metalliferous minerals**
01 04 09	Waste clays
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	soil and stones other than those mentioned in 17 05 03
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 02	**garden and park wastes**
20 02 02	Soils and stone (excluding topsoil)

APPENDIX ESSD9
Baseline Ground Gas Datasets
(Refer to Spreadsheet File Ref.: AI1009_07_A9)