Solum House
Unit 1 Elliott Court
St Johns Road
Meadowfield
Durham
DH7 8PN

Tel: (0191) 378 6380
Fax: (0191) 378 0494

e-mail: admin@arc-environmental.com
www.arc-environmental.com

PHASE 1: DESK TOP STUDY REPORT

PREPARED FOR HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

PROPOSED MULTI-USE DEVELOPMENT

GLOBE MILLS

BRIDGE STREET

SLAITHWAITE

HUDDERSFIELD

HD7 5JN

Project No: 12-688

Prepared By:

John Ditchburn

Date: 29th January 2013

Approved By:

Terry McMenam

Date: 29th January 2013

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1.0 Introduction January 2013

Arc Environmental Limited has been instructed by Dudleys Consulting Engineers Ltd of Horsforth, Leeds on behalf of Hartley Quality Residential Developments Ltd., to undertake a Phase 1: Desk Top Study Report for Globe Worsted Mills located within the Colne Valley in the Yorkshire village of Slaithwaite, Huddersfield.

The proposed development will have several uses including a GP medical practice, pharmacy, retail units, library, café, public house, crèche, gymnasium, offices, innovation and technology units. The café will be a new build first floor extension. A new footbridge will also be constructed to the north over Huddersfield Canal and will enter the former mill building on the first floor. A multi-storey car park will also be constructed. The primary objectives of the report are to assess the geological and potential ground contamination conditions on and beneath the surface of the development area. This Phase 1: Desk Top Study has been carried out generally in accordance with CLR11: Model Procedures for the Management of Land Contamination and based on all of the data reviewed, a Conceptual Site Model (CSM) has been developed to define the scope and extent of any further investigation works deemed necessary, prior to commencing with any future redevelopment works. A site walkover (reconnaissance survey) was completed as part of this report with site photographs included within Appendix II, and all relevant observations noted in Section 2.1 below.

Prior to the completion of this report, contact was made with Environmental Health at Kirklees Metropolitan Borough Council to determine if they held any specific information relating to the site, and or nearby adjacent land.

2.0 Physical Setting

2.1 Site Details:-

Table 2.1 N=North, S=South etc.

Site Name & Address:	Globe Mills, Bridge Street, Slaithwaite, Huddersfield, HD7 5JN.
National Grid Reference:	408110, 414030 – representative for the central part of the site.
Description of Location:	The village of Slaithwaite stands on the river Colne, the Huddersfield canal, and the Leeds and Manchester railway. The village is four and a half miles southwest of Huddersfield. The site is located between the river and canal within the centre of the village.
Development Area Boundaries:	N = Huddersfield Canal, E = Timber Works and other commercial premises, S = River Colne flowing west to east along with a Weir/Sluice gate, W = Residential/commercial properties
Development Area Shape & Details:	The site is irregular in shape and it is proposed to refurbish the mill buildings for multi-use purposes (typically commercial, leisure, retail and innovation) A new footbridge, first storey propped extension and multi-storey car park are also proposed.
Above Ground Structures:	These include the 5 no. and 6 no. storey mill buildings, a chimney, above ground fuel tank, office buildings and sheds.
Sub-surface Structures & Services:	The mill buildings have semi-basements. Buried utilities are also anticipated including electricity, gas, water and drainage.
Development Area History	Established in 1887, as Worsted-spinning Mill by Globe Worsted Company the site is divided by a public road and was developed in stages. The first mill, detached boiler house, chimney and offices were built between Bridge Street and Huddersfield Canal in 1887/8. The second mill or warehouse was built on other half of plot in 1889. The main mill is fireproof, of five storey's and thirty-three bays, and has central engine house and rope race. Sheds were added to the mill with at least one used for combing. The 1889 mill/warehouse, of five storey's with a basement and of fifteen bays, is of fireproof construction and had a small engine originally. It was connected to main mill from beginning by an overhead walkway. The mill has been vacant since 2005.

2.0 Physical Setting

2.1 Site Details:-

Table 2.1 (Cont'd) N=North, S=South etc.

Summary of Walkover Features:	From the results of the site walkover the mill buildings and infrastructure have remained almost unchanged. The above ground tank and chimney stack remain on the northern site whilst numerous tanks once located to the south of the southern mill building are no longer present. The adjacent former mill (Bridge Street Mill) and gas works are now redeveloped with commercial premises and a timber yard.

3.0 Environmental Setting

3.1 Site Geology:-

The geological assessment for the development area has been based on records produced by the British Geological Survey (BGS) and other sources. The following documents have been reviewed as part of this study, selected copies of which can be seen in Appendix III:-

- Huddersfield, England and Wales Sheet 77, Solid and Drift Geology Map, 1:50,000 Series.
- BGS Borehole Record Sheets (sunk c.350m to the east and northeast)

3.1.1 Made Ground

Geological plans indicate that there is no made ground recorded across the site area. However, there is anticipated to be some made ground present associated with the existing buildings situated across the development area some of which include semi-basements. It is anticipated that typically up to c.2m of made ground will be present with localised deeper zones. Significant thicknesses of made ground are anticipated close to the site associated with an infilled mill pond and gasometers.

3.1.2 Drift Deposits

BGS data indicates the development area to be initially underlain by Alluvium comprising clay, silt, sand and gravel with possible peat lenses. The thickness of drift is likely to be c.<5m. A borehole located c.350m downstream of the site adjacent to the River Colne records coarse gravel to c.3.7m over coarse sand to c.4m over clay to c.4.5m before the solid geology is recorded.

3.1.3 Solid Geology

The published BGS plan indicates that the solid geology below the development area comprises the Millstone Grit Group. These deposits comprise very fine to very coarse grained sandstone, locally pebbly, interbedded with mudstone and siltstone with subordinate marine bands, seat earths and thin mainly unproductive coals.

3.2 Coal Mining & Quarrying Assessment:-

This sequence of the Millstone Gits does not contain productive coal bearing strata, and as such shallow coal workings is not considered to be an issue for this site or the proposed development. From the BGS plans and the historical OS maps there is no evidence of shafts, adits or opencast extraction within the surrounding area.

As such, from the information obtained and reviewed no further assessment or intrusive investigation works are required with regards to historical coal mining activities. This is confirmed within the Coal Authority Gazzetter for England and Wales which indicates that Slaithwaite Village does not lie within a coal mining area.

3.0 Environmental Setting (Cont'd)

3.3 Site Hydrogeology:-

- There are no Source Protection Zones present within c.250m of the site.
- Historically from at least c.1965 Globe Worsted Mill was permitted to extract surface water from the River Colne for general use in the textiles industry.

Table 3.1

STRATA	Aquifer / Soil Leachability EA Classification	Comments
Made Ground:	Soils of High Leaching Potential (U).	Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise.
Drift Geology:	Secondary A Aquifer.	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
Solid Geology:	Secondary A Aquifer.	As above.

3.4 Site Hydrology:-

Table 3.2

RAINFALL	Measurements (mm)	Comments
Annual	834.6	Based on 'station average' records from Sheffield: 1981-2010.
Precipitation, January	83.4	
Precipitation, July	56.0	
SURFACE WATER FEATURE	**Location**	**Comments**
GQA Classified River	To the immediate south.	The River Colne (River Quality B) bounds the site to the south and flows from west to east. Huddersfield Canal (River Quality B) bounds the site to the north.
Unclassified Watercourse(s), Ponds & Lakes	None recorded within c.250m.	~
Flooding	The development area is shown to fall within the designated Flood Zone II.	The development area falls within an area of extreme flooding from rivers or sea without defences. (1 in 1000 year flood event). It is understood that a Flood Risk Assessment has been completed for this development by others.

3.5 Site Ecology & Radon Assessment:-

The development area is recorded to be within a Nitrate Vulnerable Zone. These are areas of land that drain into nitrate polluted waters, or water which could become polluted by nitrates. This is not considered to be of significant concern when considering the proposed end use.

The development area is not located in any sensitive land use areas such as Adopted Green Belt, SSSI's, etc., although an area of Adopted Greenbelt is recorded c.106m to the southeast.

The development area lies in an area where less than 1% of homes are above the Radon action level, in accordance with the British Geological Survey (BGS), National Geoscience Information Service and their assessment suggests that the site requires no radon protection measures for new structures. This corresponds with the BRE Digest, BR211 (2007) Radon: Guidance on protective measures for new buildings, the site is situated within a clear grid square (1km), and therefore no radon protective measures are required for the site.

3.0 Environmental Setting (Cont'd)

3.6 Estimated Soil Chemistry:-

Data provided by the BGS in relation to estimated soil chemistry for a number of key metals and metalloid elements are summarised in Table 3.3 below.

Table 3.3

Element	Location	Estimated Soil Concentrations (mg/kg)
Arsenic	Development area	35-45
Cadmium	Development area	<1.8
Chromium (total)	Development area	60 – 90
Lead	Development area	<150
Nickel	Development area	15 – 30

4.0 Industrial Setting

4.1 Recent Site History:-

Copies of old survey plans covering this site area and adjacent areas are included in Appendix II, and the relevant details from these are summarised below.

The site appears undeveloped during c.1854, although Huddersfield Canal has been constructed to the immediate north along with a lock and docking area. The dock was later infilled during the 1960's.

By c.1892 Globe Worsted Woollen Mills are established along with Bridge Street Mill to the east of southern mill building. The site is divided by a public road and was developed in stages. The first mill, detached boiler house, chimney and offices were built between Bridge Street and Huddersfield Canal in 1887/8. An above ground tank was also constructed on the northern portion. The second mill or warehouse was built on other half of plot in 1889. The main mill is of five storey's and thirty-three bays, and had a central engine house and rope race. Sheds were added to the mill with at least one used for combing. The 1889 mill/warehouse, of five storey's with a basement and of fifteen bays had a small engine originally. It was connected to main mill from beginning by an overhead walkway. Tanks are recorded to the immediate south of the southern mill building. Several tanks are recorded by c.1932.

A gas works including 2 no. gasometers are recorded to the immediate east both sides of Bridge Street, between c.1892 and at least c.1980 (see Gas Works comments below). From c.1892 a large mill pond and Slaithwaite Spinning Mills (Cotton) are recorded to the east beyond the gas works. The village is Slaithwaite is well established and includes housing, a railway and station, several mills, schools, churches, etc.

The gasometers are no longer shown by c.1992 suggesting the gas works were decommissioned some time between c.1980 and c.1992. Similarly Bridge Street Mill has also been demolished.

4.1.1 Gas Works Comments:-

The coal carbonisation industry developed through the 19th Century with three main branches; coke production, gas production and tar distillation. The process of coal carbonisation involves heating coal in the absence of air (in retorts – coal ovens) to produce coal gas (also known as 'town gas'), coke, tar and ammoniacal liquor.

During carbonisation about one third of the original mass of the coal is converted to gas. This gas contained impure coal gas, ammoniacal liquor and tar which had to be removed before the gas could be used or distributed to consumers. The liquid fractions were separated and the gas was purified to remove remaining ammonia, tar, hydrocarbon oils and sulphur compounds. The final 'town gas' contained more than 50% hydrogen, carbon monoxide and some hydrocarbons.

4.0 Industrial Setting (Cont'd)

4.1 Recent Site History (Cont'd):-

4.1.1 Gas Works Comments (Cont'd):-

The early gas works used slaked lime (calcium hydroxide) to remove hydrogen sulphide. This process produced foul lime (a mixture of slaked lime, calcium hydrosulphide and calcium thiocarbonate). The weathering of foul lime, lead to odour problems from the emission of hydrogen sulphide.

Between 1850 and 1900, the use of slaked lime to remove hydrogen sulphide gave way to the use of iron oxide in the form of 'bog ore' (hydrated ferric oxide mixed with peat or wood shavings). The product was ferric sulphide. The iron oxide also removed hydrogen cyanide from the gas resulting in the formation of complex cyanides.

Contamination occurred in various ways during the operation of gas making and purification processes. There were accidental spills and leakages of process liquids, by-products and wastes, and sometimes the discharge of liquors to land. Solid by-products such clinker and spent oxide (deep blue friable solid), which is a residue from iron oxide used in the purification of coal gas to remove sulphur and cyanide (commonly known as 'Blue Billy' or 'Prussian Blue') were often deposited on adjacent land, or used as fill and hardcore during redevelopment of the plant.

Coal tar is one of the by-products of coal carbonisation, and was used in the past as a source of organic chemicals. Coal tar is a mixture of substances such as benzene, toluene, xylenes, ethyl benzene, styrene, phenol, cresols, xylenols, polyhydric phenols (tar acids), napthalenes, anthracene and phenanthrene. On most works the tar was stored in tanks from which it was periodically removed for processing at another site. Some large works had their own tar distillation plants. Coal tar is a black/brown viscous liquid.

Ammoniacal liquor was also stored in tanks for further use. Its most important constituent is ammonia usually in the form of ammonium salts, chiefly the cyanide, sulphide, carbonate ('free ammonia') and also as thiocyanate, thiosulphate, sulphate and ferrocyanide ('fixed ammonia'). The ammoniacal liquor was stored in underground tanks. Soils containing ammoniacal liquor can be identified by their characteristic 'organic' odour.

Heavy metals are present as trace elements in 'bog ore', coal, coke, spent oxide and foul lime. Metal oxides have been employed in carbonisation process as catalysts and corrosion inhibitors. Lead was used in paintwork as a caulking for gasholders and pipework.

[*Information taken from Notes on the Redevelopment of Gasworks Sites ICRCL Guidance Note 18/79 Fifth Edition, April 1986 & Department of the Environment (DoE) Industry Profile for Gas Works, Coke Works and other Coal Carbonisation Plants, 1995*]

Contact was made to the National Grid (The National Gas Archive) in order to gain some further site specific information relating to the site. A site plan of the gas works has been received to date and this can be seen in Appendix V. Once the remainder of the information becomes available any useful information will be submitted via an addendum letter report, and used to assist in the design of appropriate Phase 2 investigations.

4.2 Landfill & Waste:-

The following information relating to landfill and waste has been obtained from the Envirocheck Report;

- There are no historical landfills recorded on or within c.250m of the development area.
- There are no licensed waste management facilities within c.250m of the site.
- There are no registered waste treatment or disposal sites within c.250m of the site.

4.0 Industrial Setting (Cont'd)

4.2 Landfill & Waste (Cont'd):-

- There are no local authority recorded landfill sites within c.250m of the site.
- The former mill pond and gasometer structures to the east have been infilled some time between c.1980 and c.1992 and represent a potential gassing risk, along and with any significant made ground which may be present on site. The risk of gassing from the infilled dock is considered low due to the water body (Huddersfield Canal) providing a barrier.

When considering the above there is felt to be a low/moderate risk from hazardous ground gas. Therefore gas monitoring will need to be incorporated into the design of any Phase 2 intrusive investigation works.

4.3 Statutory Requirements / Authorisations:-

Table 4.2

TYPE	Location	Comments
Enforcement and Prohibition Notices	None recorded within c.250m	~
Integrated Pollution / Prevention Controls and Enforcements	Several recorded within c.250m	These relate to coating, printing and textiles and the handling of organic chemicals located c.40 to the southwest and c.200m to the northwest. Shaw Timber & Shaw Pallet Control Limited to the immediate east are permitted to manufacture timber and wood based products under a Local Authority Pollution Prevention and Controls permit.
Prosecutions Relating to Authorised Processes	None recorded within c.250m	~
Registered Radioactive Substances	None recorded within c.250m	~
COMAH /Explosive / NIHHS Sites	None recorded within c.250m	~
Planning Hazardous Substances Consents / Enforcements	None recorded within c.250m	~
Contemporary Trade Entries	Several recorded within c.250m	Nearby trades include a greeting card publishers & wholesalers, plastics – injection moulding, engineers, printers, tube bending, wood products, builders merchants, etc all within 100m of the site.
Fuel Station Entries	None recorded within c.250m	~

4.4 Pollution Incidents and Discharge Consents.:-

Table 4.3

TYPE	Location	Comments
Discharge Consents	None recorded within c.250m	~
Pollution Incidents to Controlled Waters	Several recorded within c.250m	Several pollution incidents have occurred between c.1991 and c.1994 ranging from minor to significant incidents including oils/diesel, foam/soap suds and lubricating oils. The incidents affected both the Huddersfield Canal and River Colne.

4.0 Industrial Setting (Cont'd)

4.4 Pollution Incidents and Discharge Consents (Cont'd):-

Table 4.3 (Cont'd)

TYPE	Location	Comments
Prosecutions Relating to Controlled Waters	None recorded within c.250m.	~
Substantiated Pollution Incident Register	One recorded within c.250m.	A significant incident occurred c.102m to the southwest during 2003 involving pesticides and biocides
Water Industry Act Referrals	None recorded within c.250m.	~

5.0 Conceptual Site Model (CSM)

The Conceptual Site Model (CSM) is one of the primary planning tools that can be used to support the decision making process of managing contaminated land and groundwater on any given site, and allows a better understanding of what needs to be done to achieve risk management, and from this appropriate remediation techniques, if required for those risk management goals can be chosen. This can be done by undertaking a *source-pathway-receptor* analysis of the site. The anticipated *sources*, *pathways* and *receptors* for this site are summarised in Table 5.1 below.

A graphical representation of the CSM has been produced for this site and can be seen attached in Appendix IV which sets out the critical plausible pollutant linkages of concern for this particular site, with regard to potential contamination as indicated above.

Table 5.1

	Sources (S)
S1	Made ground possibly comprising disturbed natural strata with anthropogenic debris (i.e. brick etc) associated with the existing buildings across the development area
S2	Above ground storage tanks were formerly present on the southern mill site, whilst an existing tank is present on the northern site
S3	A gas works historically bounded the site to the east and may represent a significant source of ground contamination
S4	Infilled adjacent gasometer locations and an infilled mill pond represent potential off site sources of ground gas/vapours
S5	The boiler house and chimney represent potential sources of ground contamination associated with fuels / oils and combustion by-products i.e. ash and flu dust

	Pathways (P)
P1	Ingestion
P2	Inhalation of indoor / outdoor air
P3	Dermal contact
P4	Migration through existing services
P5	Direct contact with building materials
P6	Infiltration and surface runoff

	Receptors (R)
R1	Human Health (future site users)
R2	Surface & Groundwater (Secondary A Aquifer)
R3	Building materials *
R4	Adjacent sites
R5	Flora and fauna *

* = Not included in the Human Health & Controlled Waters Risk Assessment

5.0 Conceptual Site Model (CSM) (Cont'd)

5.1 Geotechnical Considerations:-

The following potential geotechnical issues and hazards have been identified for the development area, and these issues should be considered before future redevelopment is to take place.

- Actual depth, origin, variability and condition of made ground present across the development area.
- Lateral support could be needed if localised significant thickness of made ground and, or 'geotechnically poor' natural alluvial deposits are present below the development area.
- The nature of existing foundations when considering additional future loading conditions, following refurbishment and extensions which may tie into existing structures.
- Buried services that may pass below proposed foundations
- Control of surface drainage and shallow groundwater within future excavations.
- Geotechnical parameters of any natural drift (alluvium) and bedrock deposits below proposed development areas (proposed footbridge, first floor café and multi-storey car park).
- The possible presence of peat and/or 'geotechnically poor' drift deposits below the site.
- Excavations through competent rock – if present at shallow depth.
- Restricted site access, due to existing buildings may prove problematic for Phase 2 intrusive works and future redevelopment works.

In order to determine the geotechnical considerations above with more certainty, further site investigation works are deemed necessary specific to the proposed development. These should take place prior to commencing with any developments in the future. Following this work, detailed foundation proposals for the new development can then be prepared.

The information reviewed indicates that the site can be considered as being located within a **LOW - MODERATE** geotechnical risk setting.

5.2 Sources of Contamination and Anticipated Contaminants:-

The historical Ordnance Survey maps, Landmark Envirocheck Report and other environmental information revealed that the development area is considered likely to be at significant risk of heavy or gross ground contamination when considering the historical uses both on site and immediately adjacent to the site.

When considering the above, the following potential contamination sources have been identified for this site and these should be considered before future development is to take place.

- Made ground associated with the development of the mill buildings.
- Fuel storage tanks (existing and former).
- A historical gas works which bounded the site.
- Infilled gasometers and an infilled mill pond which represent potential off site sources of ground gas/vapours.
- A chimney which represents a potential source of ground contamination associated with fuel/oils and combustion by-products i.e. ash and flu dust.

It is therefore concluded that adequate ground contamination screening and gas monitoring will need to be incorporated into the design of any intrusive investigation works. Laboratory testing should also be undertaken on representative samples taken from across the development area for naturally occurring contaminants which could have a detrimental effect on building materials.

5.0 Conceptual Site Model (CSM) (Cont'd)

5.2 Sources of Contamination and Anticipated Contaminants (Cont'd):-

In consideration of the above and when taking into account the guidance contained in the DEFRA and EA Contaminated Land Reports and the appropriate DoE industry profiles, it would be prudent to test samples of soil from this site for a range of contaminants, as below;

Soils – Human Health;

Typically comprising; *Arsenic, Cadmium, Chromium (total, III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide and Total Organic Carbon (TOC) and Asbestos.* Additional contamination testing for hydrocarbons (TPH's and PAH's) should also be undertaken if significant ashy debris or evidence of fuel / oils are noted on site.

If suspected, particularly on the eastern portions of the site, then screening for a Gas Works Suite may be required as follows:- Heavy Metals (As, Cd, Cr, Cu, Pb, Ni, Hg, Se, Zn), Boron (water soluble), pH, Ammonia (exchangeable), Chloride (water soluble), Sulphate (water soluble), Sulphur (free), Cyanide (free, complex & total), Thiocyanate, Phenols (speciated), Speciated TPH, BTEX, & Speciated PAH

Monitoring wells should also be installed on site and monitored frequently for the presence of ground gases/vapours.

At this early stage the information reviewed indicates that the site can be considered as being located within a **MODERATE to HIGH** ground contamination risk setting for Human Health.

Groundwater/Leachate – Controlled Waters;

When considering the potential risk to controlled waters the site is bounded by a river and canal (both River Quality B) and is also situated overlying a Secondary A Aquifer. Given the heavy industrial heritage of the site the Environment Agency (EA) is likely to require a robust risk assessment including dedicated groundwater monitoring wells followed by subsequent groundwater sampling and screening.

It should be noted that the former gas works site / gasometers were located down hydraulic gradient (down stream) of the site therefore significantly reducing the risk of contamination migrating onto the site.

At this early stage the information reviewed indicates that the site can be considered as being located within a **HIGH** ground contamination risk setting for Controlled Waters.

5.3 Preliminary Risk Assessment Summary & Recommendations:-

Human Health – there is felt to be a moderate to high risk to human health from on site and off site sources of contamination as discussed in Table 5.1 and Section 5.2. In addition, monitoring wells should also be installed on site to assess the potential risks to the site from hazardous ground gases/vapours.

Controlled Waters – It is considered that the groundwater beneath the site is at a high risk due to the plausible sources of contamination on and immediately adjacent to this development area.

5.0 Conceptual Site Model (CSM) (Cont'd)

5.3 Preliminary Risk Assessment Summary & Recommendations (Cont'd):-

It is recommended that as a part of a Phase 2: Ground Investigation (intrusive investigation) for the development area, consideration is given to assessing any potential risks associated with any ground contamination, which may be present and which might pose a risk towards the proposed end users or the wider environment. Phase 2 intrusive works should comprise the following or similar works;

- A series of boreholes, including in-situ geotechnical testing (SPT testing) and sampling to help aid with future foundation design and to collect samples for subsequent laboratory testing. Boreholes should be targeted to areas of future development and areas of potential significant contamination i.e. adjacent to tanks, former gas works site.
- Trial pits to confirm nature of existing foundations across the development area.
- Installation of a minimum of 3 no. combined groundwater and ground gas monitoring standpipes with an appropriate number of visits in accordance with CIRIA C665. These can be incorporated with the boreholes.
- Appropriate laboratory geotechnical testing.
- Contamination screening on selected samples recovered to assess the risks to Human Health - typical contaminants detailed in Section 5.2.
- Leachate / water screening on selected samples recovered to determine the risks posed to Controlled Waters and adjacent sites if elevated levels are recorded on site.
- Site supervision and production of a factual and interpretive Phase 2: Ground Investigation Report, including a Level 1 Ground Contamination Risk Assessment, if required.

The samples of soil collected should be forwarded to UKAS and MCERTS accredited laboratory to undertake the recommended testing.

End of Report

GENERAL REFERENCES

- British Geological Survey: Maps, Reports, Memoirs, etc.
    - Huddersfield, England and Wales Sheet 77, Solid and Drift Geology Map, 1:50,000 Series.
    - BGS Borehole Record Sheets

- DoE, DEFRA & EA - Contaminated Land Reports.

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CLR 4: Sampling strategies for contaminated land. Report by The Centre for Research into the Built Environment, The Nottingham Trent University. DoE, 1994.
CLR 5: Information systems for land contamination. Report by Meta Generics Ltd. DoE, 1994.
CLR 6: Prioritisation & categorisation procedure for sites which may be contaminated. Report by M J Carter Associates. DoE, 1995.
CLR11: Model Procedures for the Management of Land Contamination. DEFRA/EA, 2004.
Science Report Final SC050021/SR2: Human Health Toxicological Assessment of Contaminants in Soils, 2009.
Science Report Final SC50021/SR3: Updated Technical Background to the CLEA Model, 2009.
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Science Report P5-080/TR3: The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils.

- BS10175:2011: Investigation of Potentially Contaminated Sites - Code of Practice

- BS5930:1999+A2:2010: Code of Practice for Site Investigations

- BRE Digest BR211(2007): Radon: Guidance on Protective Measures for New Buildings

- Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D66, 2008 (NHBC, EA, CIEH)

- Methane and Associated Hazards to Construction - CIRIA Reports 149,150,151 & 152

- Assessing Risks Posed by Hazardous Ground Gases to Buildings, CIRIA C665, 2007

- BS8485: 2007: Code of Practise for the Characterization and Remediation from Ground Gas in Affected Developments

- CIRIA Report C624 'Development and flood risk – guidance for the construction industry' and Planning Policy Statement 25 (PPS25)

- Assessment of Subsidence Arising from Gypsum Dissolution, Technical Report, Department of the Environment

APPENDIX I

Site Location Plan

Aerial Photograph

Existing Site Layout Plan

Proposed Development Layout Plan

SCALE 1:25,000 @ A4

SCALE 1:12,500 @ A4

Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Bridge Street, Slaithwaite
Globe Mills
Tyne & Wear, DH5 0DX

Drawing Title:
Location Plan

rev.	date	amendments	drawn	chckd

Job Reference:	Drawing Number:	Revision:
12-688	–	–

Drawn by:	Date:	Scale at A4:
P.D	30.01.13	As Shown

Checked by:	Approved by:	
J.P.D	J.P.D	The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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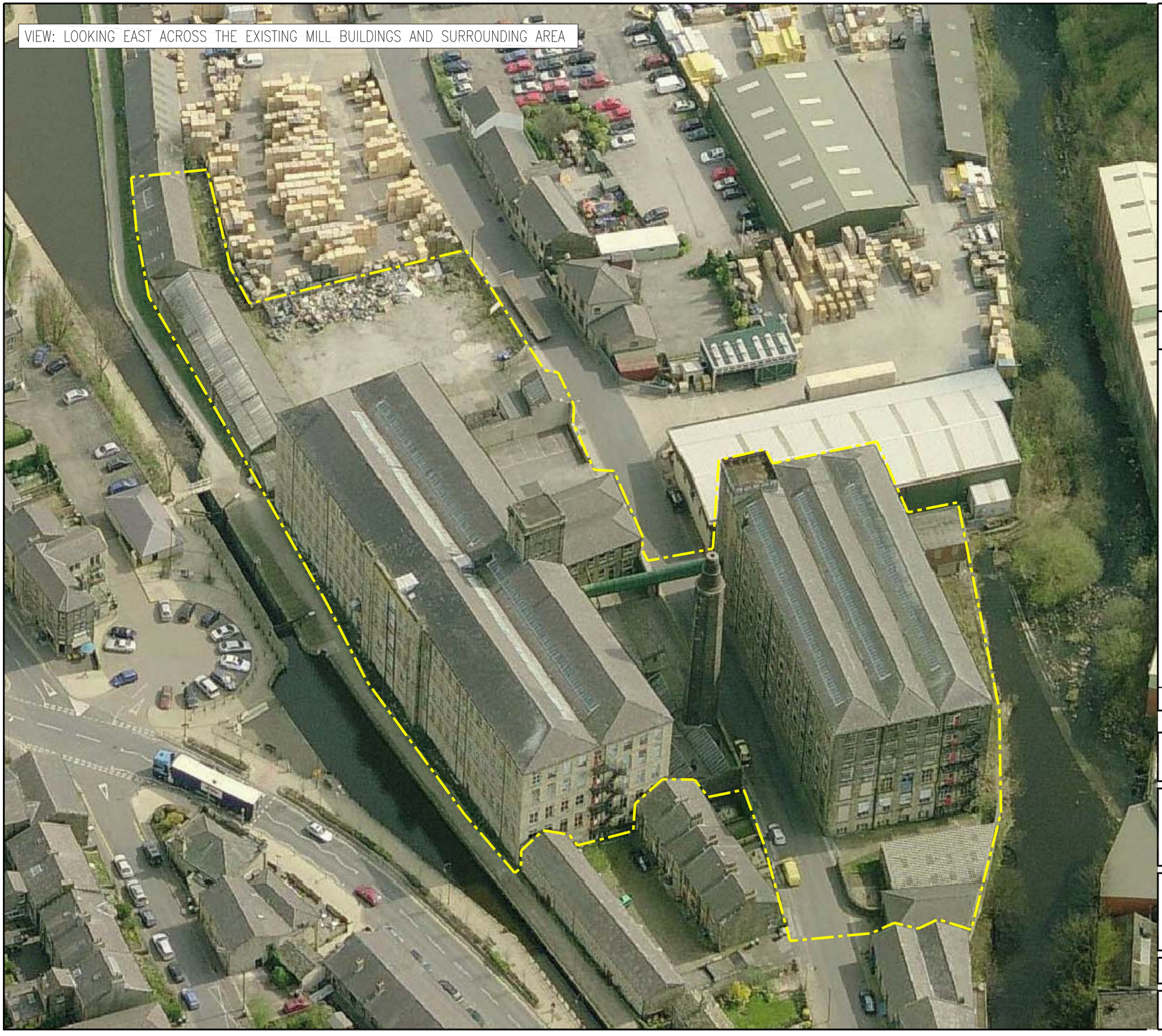
ARC ENVIRONMENTAL LTD
Solum House
Unit 1 Elliott Court
St. John's Road
Meadowfield
Durham
DH7 8PN
Tel: (0191) 378 6380
Fax: (0191) 378 0494
e-mail: admin@arc-environmental.com
web: www.arc-environmental.com

VIEW: LOOKING EAST ACROSS THE EXISTING MILL BUILDINGS AND SURROUNDING AREA



ARC ENVIRONMENTAL LTD
Solum House
Unit 1 Elliott Court
St. John's Road
Meadowfield
Durham, DH7 8PN
Tel: (0191) 378 6380
Fax: (0191) 378 0494
e-mail: admin@arc-environmental.com
web: www.arc-environmental.com

LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

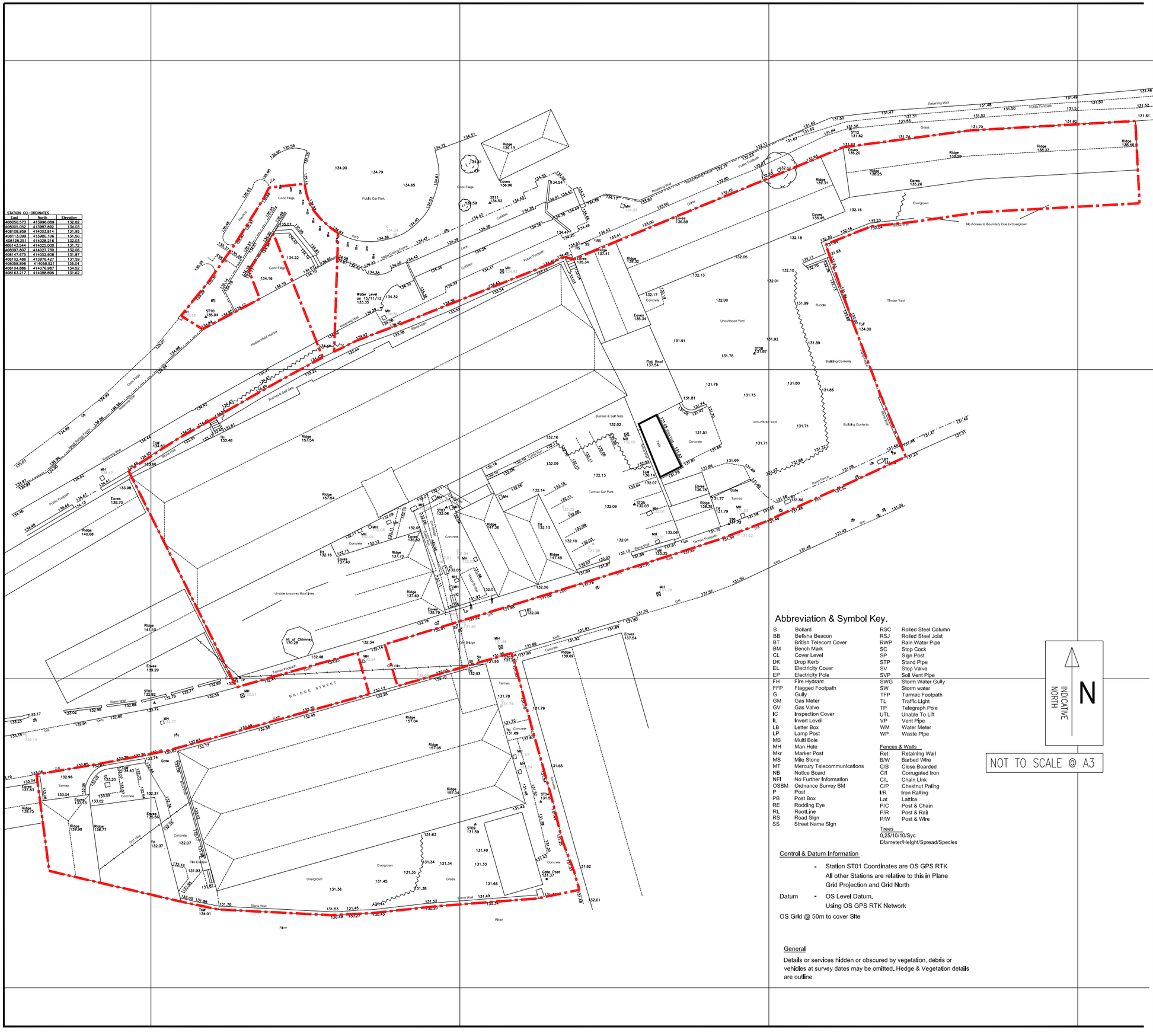
Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Aerial Photograph

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12-688	–	–



Abbreviation & Symbol Key.

B	Bollard	RSC	Rolled Steel Column
BB	Bellsha Beacon	RSJ	Rolled Steel Joist
BT	British Telecom Cover	RWP	Rain Water Pipe
BM	Bench Mark	SC	Stop Cock
CL	Cover Level	SP	Sign Post
DK	Drop Kerb	STP	Stand Pipe
EL	Electricity Cover	SV	Stop Valve
EP	Electricity Pole	SVP	Soil Vent Pipe
FH	Fire Hydrant	SWG	Storm Water Gully
FFP	Flagged Footpath	SW	Storm water
G	Gully	TFP	Tarmac Footpath
GM	Gas Meter	TL	Traffic Light
GV	Gas Valve	TP	Telegraph Pole
IC	Inspection Cover	UTL	Unable To Lift
IL	Invert Level	VP	Vent Pipe
LB	Letter Box	WM	Water Meter
LP	Lamp Post	WP	Waste Pipe
MB	Multi Bole		
MH	Man Hole	Fences & Walls	
Mkr	Marker Post	Ret	Retaining Wall
MS	Mile Stone	B/W	Barbed Wire
MT	Mercury Telecommunications	C/B	Close Boarded
NB	Notice Board	C/I	Corrugated Iron
NFI	No Further Information	C/L	Chain Link
OSBM	Ordnance Survey BM	C/P	Chestnut Paling
P	Post	I/R	Iron Railing
PB	Post Box	Lat	Lattice
RE	Rodding Eye	P/C	Post & Chain
RL	RootLine	P/R	Post & Rail
RS	Road Sign	P/W	Post & Wire
SS	Street Name Sign		

Trees
0,25/10/10/Syc
Diameter/Height/Spread/Species

Control & Datum Information

- Station ST01 Coordinates are OS GPS RTK
  All other Stations are relative to this in Plane Grid Projection and Grid North

Datum - OS Level Datum,
Using OS GPS RTK Network

OS Grid @ 50m to cover SIte

General

Details or services hidden or obscured by vegetation, debris or vehicles at survey dates may be omitted. Hedge & Vegetation details are outline

INDICATIVE NORTH N

NOT TO SCALE @ A3

ARC ENVIRONMENTAL LTD
Solum House
Unit 1 Elliott Court
St. John's Road
Meadowfield
Durham, DH7 8PN
Tel: (0191) 378 6380
Fax: (0191) 378 0494
e-mail: admin@arc-environmental.com
web: www.arc-environmental.com

LEGEND

	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Existing Site Layout Plan

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12-688	–	–

NOT TO SCALE @ A3

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Durham, DH7 8PN
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web: www.arc-environmental.com

LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Proposed Development Layout Plan

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12-688	–	–

APPENDIX II

Site Observations – Walkover Record Sheets

VIEW: LOOKING EAST ACROSS THE EXISTING MILL BUILDINGS AND SURROUNDING AREA

PLATE 1

PLATE 2

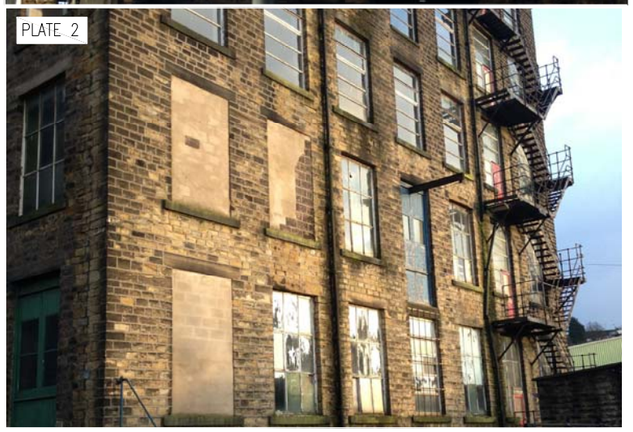

PLATE 3

PLATE 4

PLATE 5

PLATE 6

PLATE 7

PLATE 8

PLATE 9

PLATE 10

ARC ENVIRONMENTAL LTD
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e-mail: admin@arc-environmental.com
web: www.arc-environmental.com

rev.	date	amendments	drawn	chckd

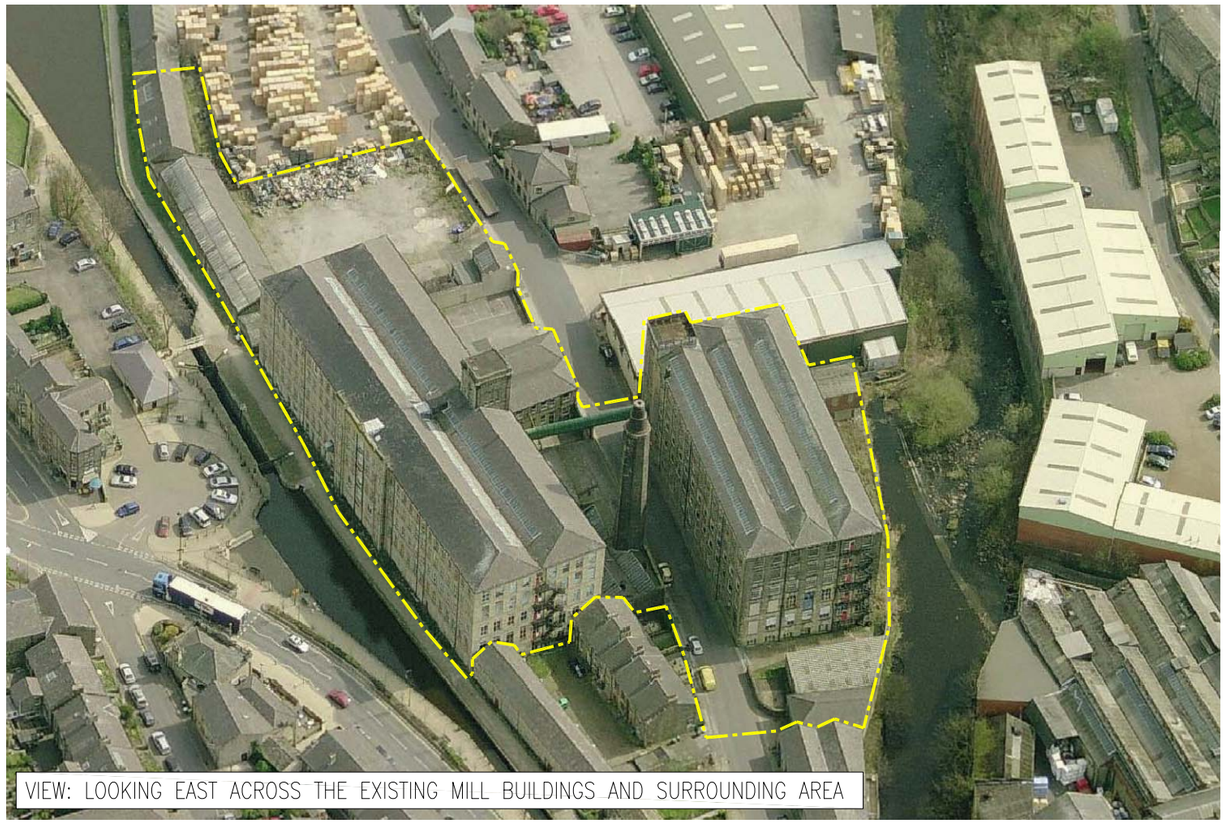
Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Site Observations – Walkover Record Sheet (1)

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12–688	–	–



VIEW: LOOKING EAST ACROSS THE EXISTING MILL BUILDINGS AND SURROUNDING AREA

PLATE 11

PLATE 12

PLATE 13

PLATE 14

PLATE 15

PLATE 16

PLATE 17

PLATE 18

PLATE 19

PLATE 20

ARC ENVIRONMENTAL LTD
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web: www.arc-environmental.com

rev.	date	amendments	drawn	chckd

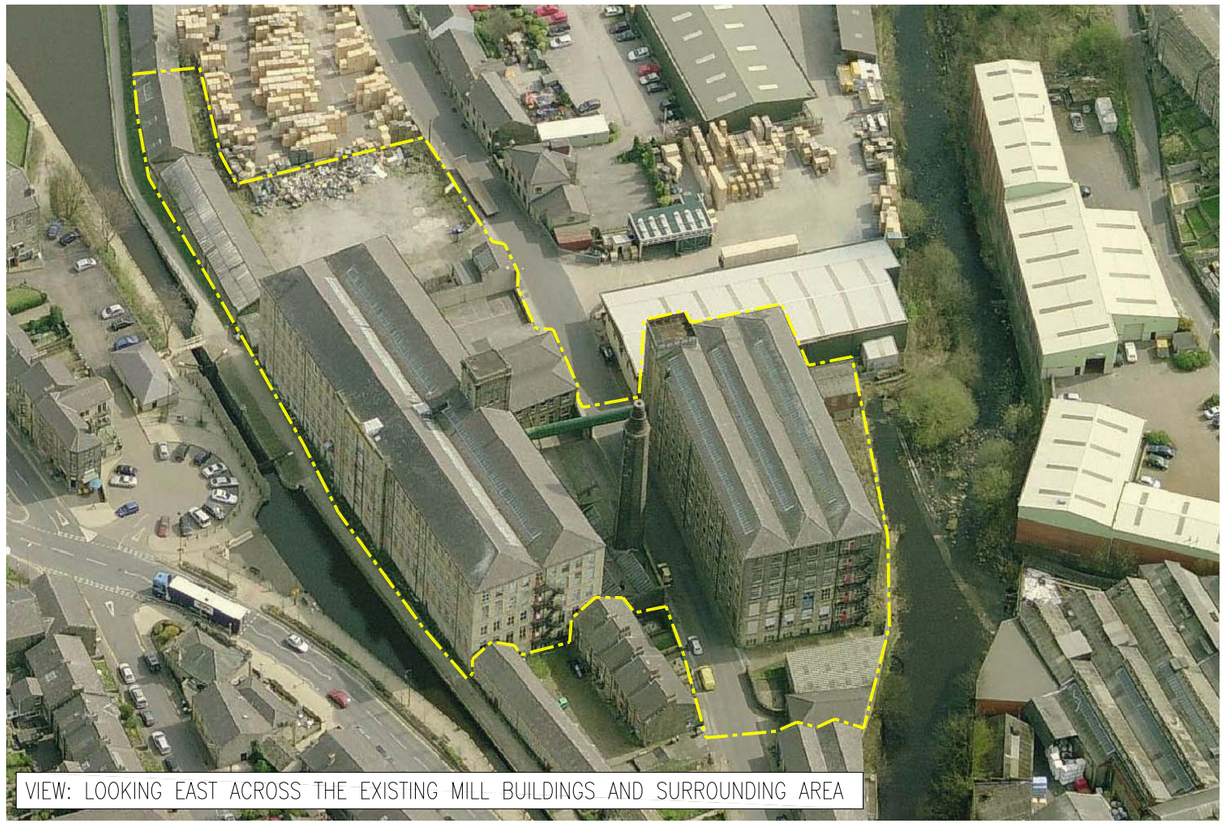
Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Site Observations – Walkover Record Sheet (2)

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12–688	–	–



VIEW: LOOKING EAST ACROSS THE EXISTING MILL BUILDINGS AND SURROUNDING AREA

PLATE 21

PLATE 22

PLATE 23

PLATE 24

PLATE 25

PLATE 26

PLATE 27

PLATE 28

PLATE 29

PLATE 30

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web: www.arc-environmental.com

rev.	date	amendments	drawn	chckd

Client:
HARTLEY QUALITY RESIDENTIAL DEVELOPMENTS LTD

Project Title:
Proposed Site Redevelopment
Globe Mills
Bridge Street, Slaithwaite

Drawing Title:
Site Observations – Walkover Record Sheet (3)

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	22.01.13	P.D	J.P.D

Job Ref:	Drg no:	Rev:
12-688	–	–

APPENDIX III

BGS Borehole Record Sheets

Landmark Envirocheck Data

1.

234

RECORD OF WELL (SHAFT OR BORE)

77 1" N.S. 77

1" O.S.

SE01SE/4

147

At Colne Valley U.D.C.

Town or Village Slaithwaite nr Huddersfield County Yorkshire Six-inch quarter sheet

Exact site__________________________ (A rough sketch-map or tracing from a map is very desirable)

__________________________ in parish of__________________________

Level of ground surface above sea-level (O.D.) 3.0.0.07m ft. If well starts below ground surface, state how far______ft.

Shaft______ft., diameter______ft. Bore______ft. Diameter of bore: at top______ins.; at bottom______ins.

Details of permanent lining tubes (internal diameters preferred) 0.51m

8.6/28' 4" X 8" from 1' 8" below

Water struck at depths of (feet)__________________________

Rest-level of water below top of well 10 1/4 8.15m feet. Suction at______feet. Yield on______hours'/days' test

1600 gallons per hour (with pump of capacity______g.p.h.); depressing water level to 226.71m feet

below top. Time of recovery______hrs. Amount normally pumped daily______g.p.h. for______hours.

Quality (attach copy of analysis if available)__________________________

Sunk by **C. Isler & Co.** for Mr.__________________________ Date of well Aug 13th 1937.

Information from **C. Isler**

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS M	Feet.	Inches.	DEPTH Feet.	Inches M
	Made up ground	1.83	6	0		
	Ballast and boulders.	1.83	6	0	12	03.66
	Coarse river sand	0.30	1	0	13	03.96
	River bed clay.	0.61	2	0	15	04.57
	Blue shale	0.30	1	0	16	04.8[illegible]
	Sandstone	0.15		6	16	6 5.03
	Blue shale,	3.20	10	6	27	08.23
R5	Hard dark grey rock	2.13	7	0	34	010.36
R4	Shale	1.52	5	0	39	011.89
	Hard grey rock	0.91	3	0	42	012.8[illegible]
	Shale Hard shale dark	5.49	18	0	60	018.29
	Shale grey	8.38	27	6	87	6 26.67
	Hard dark shale	1.68	5	6	93	0 28.35
UK	Hard rock	0.15		6	93	6 28.50

Visited Sep: 5th. 1949

Disused

Well top ground level

O.D. c 475.

Sited on Yorks 260NW.

TEF.

For Survey use only

SE45E4 SE01/7

RECORD OF WELL (SHAFT OR BORE) 77

1" N.S. 77A
1" O.S.
Grid Ref.

At Colne Valley U.D.C. SE0854 1416

Town or Village Slaithwaite nr. Huddersfield Yorks. WR

Exact site (A rough sketch-map or tracing from a map is very desirable)

in parish of

Level of ground surface above sea-level (O.D.) 3" ft. If well starts below ground surface, state how far ft.

Shaft ft., diameter ft. Bore ft. Diameter of bore: at top ins.; at bottom ins.

Details of permanent lining tubes (internal diameters preferred)
28' 4" x 8" from 1' 8" below

Water struck at depths of (feet)

Rest-level of water below above top of well 10¼ feet. Suction at feet. Yield on hours' days' test

2880 gallons per hour (with pump of capacity g.p.h.); depressing water level to 22 feet below top. Time of recovery hrs. Amount normally pumped daily g.p.h. for hours.

Quality (attach copy of analysis if available)

Sunk by C. Isler & Co. for Mr. Date of well Aug. 13th 1937

Information from C. Isler

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS Feet.	THICKNESS Inches.	DEPTH Feet.	DEPTH Inches.
Made Ground	Made up ground	6	0		
↓	Ballast and boulders	6	0	12	0
Alluvium	Coarse river sand	1	0	13	0
	River bed clay	2	0	15	0
Millstone Grit	Blue shale	1	0	16	0
	Sandstone		6	16	6
	Blue shale	10	6	27	0
R5	Hard dark grey rock	7	0	34	0
R4	Shale	5	0	39	0
	Hard grey rock	3	0	42	0
	Hard shale dark	18	0	60	0
	Shale grey	27	6	87	6
	Hard dark shale	5	6	93	0
Coal	Hard rock		6	93	6
Upper Undercliffe Grit					
Aquifer	Visited Sept. 5th. 1949				
Millstone Grit	Dr. wed				
(Carboniferous?)	well top ground level				
Upper Kinderscout Grit)	O.D. c. 475.				
OSC 25/2/99	Sited on York 260 NW.				

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.

For Survey use only

Date received	O.S.M. Office File No.	Site marked on 1" map (use symbol)
22.vi.39		

BGS ID: 36907 : BGS Reference: SE01SE4
British National Grid (27700) : 408537,414147 Report an issue with this borehole

- <<
- < Prev
- Page 3 of 4
- Next >
- >>

YORKSHIRE RIVER AUTHORITY - Survey of Existing Boreholes

I.G.S. Ref. No SE 01. SE/04 N.G.R. SE. 0854. 1415......

Licence No.

OWNERS NAME ...Colne. Valley. U.D.C

ADDRESS ....
..Slaithwaite......................

App No
Authorised Abstraction
g.p.h.
g.p.d.
m.g.a.

Strata details	Thick^ns	Depth
Made up ground	6'	
Ballast & boulders	6'	12'
Coarse river bind	1'	13'
River bed clay	2'	15'
Blue shale	1'	16'
Sandstone	6"	16'6"
Blue shale	10'6"	27'
Hard dark grey rock	7'	34'
Shale	5'	39'
Hard grey rock	3'	42'
Hard shale dark	18'	60'
Grey shale	27'6"	87'6"
Hard dark shale	5'6"	93'0"
Hard rock	6"	93'6"

Dia. ...2 ...3½ ...3½0..
Depth 0.....½.....½....18
Lining 8" x 28.4 ...
Well sinker Isler....
Date ..1937........
R.W.L. 10¼'........
P.W.L. .22'.@ 2000 g.p.h.
T ~ 78 m²/d

WELL BORING at Clayfield Oil Wks., SLAITHWAITE County YORKS. W.R.

Geol. map 1 in. map New Series 77 6 in. map

Made by J. I. Hymas. Date Jan 1935.

Sunk feet. Bored ft.

Communicated by

Height above Ordnance Datum Rest level of water

Yield

Quality (with copy of analysis on separate sheet)

SE 61 SE 66

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS. Feet.	THICKNESS. Inches.	DEPTH. Feet.	DEPTH. Inches.

CLAYFIELD OIL WORKS, SLAITHWAITE.

		Ft	ins	Ft	ins
		M			
	Boulder Clay	3.05 10	0		
R5	Brown Shale	7.32 24	0	34	0 10.36
R4	Gray Shale	6.40 21	0	55	0 16.76
	Black Shale	4.27 14	0	69	0 21.03
	Grey Shale	5.49 18	0	87	0 26.59
	Hard Rough Rock	16.15 53	0	140	0 42.67
	Dark Shale	5.44 8	0	148	0 45.11
R3	Flagstones	1.52 5	0	153	0 46.63
	Fine Grey Gritstone	0.61 2	0	155	0 47.24
	Broken Shale	0.91 3	0	158	0 48.16
	Hard Grey Sandstone	3.66 12	0	170	0 51.82

8.53m

Water level 28 feet below surface.
Tested at 2,000 gallons per hour.
Pumping level 48 feet below surface.
14.63m

Otherversion. (1935.)
RW.L. 28' 8.53
PWL. 50' 15.24 at 2500 gph.
Section at 90' 27.43
9" tubes to 40'. 12.19

Visited Sep: 5th. 1949.
Yield 2500g.p.h.
Section at 70ft down. 21.34m
Well top ground level.
R.W.L 28 ft 8.53m
P.W.L 50 ft. 15.24m
Pumping most of 24 hrs.

Analysis 25.9.49. by Trawlskale Scientific Service, Bradford.

Total Alkaline	41.0	9 p.gall.
pH	8.5	
Total Hardness	11.5	
Chlorine as Sodium Chloride	256.0	
Sulphate as Sodium Sulphate	600.0	
Electrical Conductivity.	19,000	

NSH.

SE 01/6 A

WELL BORING at Clayfield Oil Wks., SLAITHWAITE County Yorks. W.R.

Geol. map 1 in. map New Series 77 6 in. map

Made by J.T. Hymas. Date Jan 1935

Sunk feet. Bored feet.

Communicated by

Height above Ordnance Datum c 500 Rest level of water

Yield SE01 SE/6

Quality (with copy of analysis on separate sheet) SE 0840 1434

69

GEOLOGICAL FORMATION.	NATURE OF STRATA.	THICKNESS Feet.	THICKNESS Inches.	DEPTH Feet.	DEPTH Inches.

CLAYFIELD OIL WORKS, SLAITHWAITE.

§6 Letter of 3 Dec 1963 from John Haigh & Co. Ltd,
"Process for which water was required has now finished and it is unlikely it will be used again". 18/2/64.

		Ft	ins	Ft	ins
Glacial Drift	Boulder Clay	10	0		
Millstone Grit R5	Brown Shale	24	0	34	0
R4	Gray Shale	21	0	55	0
	Black Shale	14	0	69	0
	Grey Shale	18	0	87	0
	Hard Rough Rock	53	0	140	0
? THKG	Dark Shale	8	0	148	0
Upper Scotland	Flagstones	5	0	153	0
Kinderscout Flags? Grit	Fine Grey Gritstone	2	0	155	0
	Broken Shale	3	0	158	0
	Hard Grey Sandstone	12	0	170	0

Water level 28 feet below surface.
Tested at 2,000 gallons per hour.
Pumping level 48 feet below surface.

Otherwise. (1935.)
R.W.L. 28'.
Pmp. 60' at 2500 gph.
Suction at 90'.
9" tubes to 40'.

Aquifer: Millstone Grit (Upper Kinderscout (Scotland Flags) Grit)

AC 25/2/49

Visited Sep. 14. 1949.
Yield 2500 g.p.h.
Suction at 70ft down.
Well top ground level.
R.W.L. 28 ft
P.W.L. 50 ft.
Pumping most of 24 hrs.

Analysis 25.9.49. by Trawlskale Scientific Service, Bradford.

Total Alkalinity	41.0	g/p.gall.
pH	8.5	
Total Hardness	11.5	
Chlorine as Sodium Chloride	256.0	
Sulphate as Sodium Sulphate	600.0	
Electrical Conductivity	19,000	

NBH.

Geological Survey and Museum
Jermyn Street, London S.W. 1

(B10619). Wt. 15824—8123. 2500. 11/25. Gp. 160. O.A.

P. T. O.

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 36910 : BGS Reference: SE01SE6
British National Grid (27700) : 408401,414325 Report an issue with this borehole

- <<
- < Prev
- Page 5 of 6
- Next >
- >>

YORKSHIRE RIVER AUTHORITY - Survey of Existing Boreholes

I.G.S. Ref. No SE.01.SE/6 N.G.R. SE.084.143...... | Licence No.

OWNERS NAME .....CVUDC....... COLNE VALLEY UDC
ADDRESS .Clayfield Oil Works.................
.......Slaithwaite........................

App No 4683
Authorised Abstraction
g.p.h.
g.p.d.
m.g.a.

Depth		34'	55'	69'	87'	140'	148'	153'	155'	158'	170'
Thick^ns	10'	24'	21'	14'	18'	53'	8'	5'	2'	3'	12'
STRATA DETAILS	Boulder clay	Brown shale	Grey shale	Black shale	Grey shale	Hard rough rock	Dark shale	Flagstone	Fine grey gritstone	Broken shale	Hard grey s/s

Dia. ....
Depth .170'........
Lining 9".to 40'......
Well sinker Hyman..
Date .~~1949~~.1935...
R.W.L.28'.........
P.W.L. ~~Date~~ ..59'.@.3500gph
Date 1949

T ≈ 50m²/d

Copy NOT to be sent to Leeds

RECORD OF WELL

At CLAYFIELD OIL WORKS Messrs. HAIGH'S REFINERY

Town or Village SLAITHWAITE

County YORKS

For Survey use only Licence No. SE01/68 N.10589

77/69B

SE0838 1436

EXACT SITE OF WELL

Six-inch sheet 260 NW/W Six-inch National Grid sheet

For Messrs Haigh & Co. Ltd. State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above)

* DELETE WHICHEVER IS INAPPLICABLE

Level of ground surface above sea level (O.D.) ft. If well top is not at ground level, state how far above:* / below; ft.

SHAFT ft.; diameter ft.; HEADINGS (please attach details—dimensions and directions)

BORE 170 ft.; diameter of bore: at top 10 in.; at bottom 10 in.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.)

10" tubes to 41' 6" below surface

Water struck at depths of ft. below well top.

TEST CONDITIONS

Rest level of water 35 ft. above* / below well top. Suction at ft. Yield on 2-8 hours'* / days' test pumping at 3035 galls. per hour with depression to 38 ft. below well top.

Recovery to rest level in mins.* / hours Capacity of pump g.p.h. Date of measurements

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type Simmo Submersible 8C5 Motive power 3.8 H.P.

Capacity 3,000 galls. per hour. Suction at ft. below well top.

Amount pumped galls. per day. Estimated consumption galls. per week.

Well made by J.T. HYMAS (Well Engineers) Ltd. Date of sinking Feb. 1960

Information from

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

For Survey use only

Date Received 8.1.63

Section 6 from Leeds

Pumping test

Observ. well

Recorder

E.R. log

Site marked on

1" map ⊙

6" map ⊙ 12.1.63. (use symbol)

Record forwarded

to

date

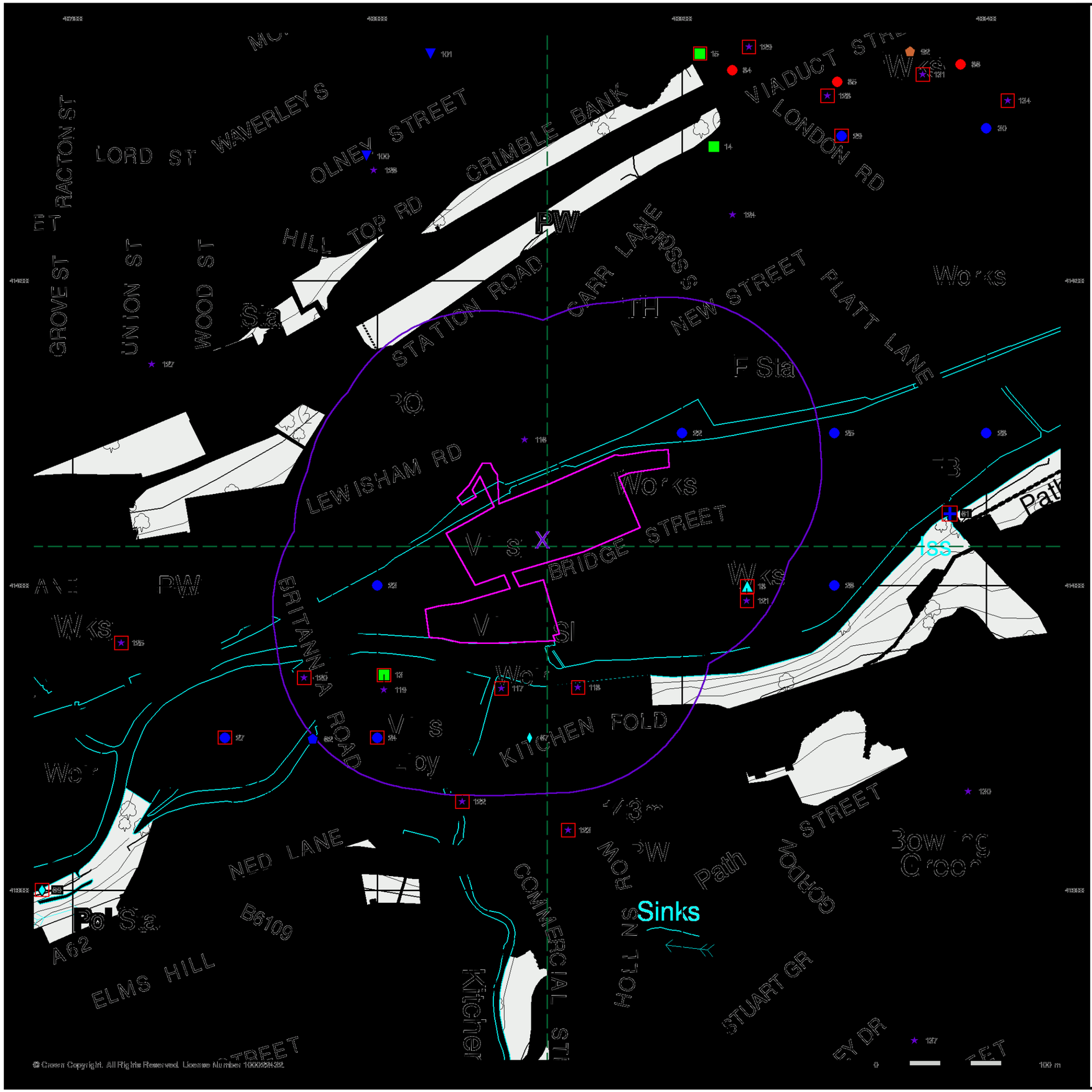
GEOLOGICAL SURVEY, WATER DIVISION, SOUTH KENSINGTON, LONDON, S.W.7.

LOG OF STRATA OVERLEAF

(11/59) (36971) WP.3418—P.S.A.7 10M. 1/60 M.P.Ltd. G.722

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far	THICKNESS Feet	THICKNESS Inches	DEPTH Feet	DEPTH Inches
Made Ground	Made ground	12	0	12	0
Millstone Grit	Broken shale	63	0	75	0
Upper (Scotland Kinderscout Flags? Grit)	Grey Sandstone (broken)	60	0	135	0
	Hard shale	6	0	141	0
	Hard broken sandstone	29	0	170	0

Aquifer:
Millstone Grit
(Upper Kinderscout Grit Scotland Flags)
CJC 25/2/99



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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

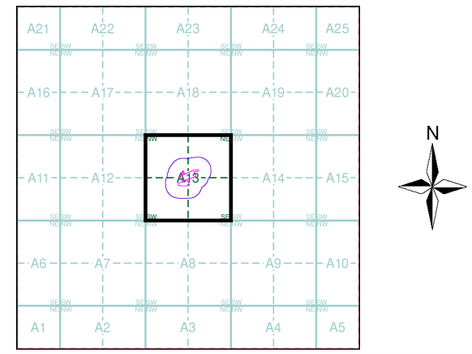
Waste

- 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
- 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

Hazardous Substances

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

Site Sensitivity Map - Segment A13



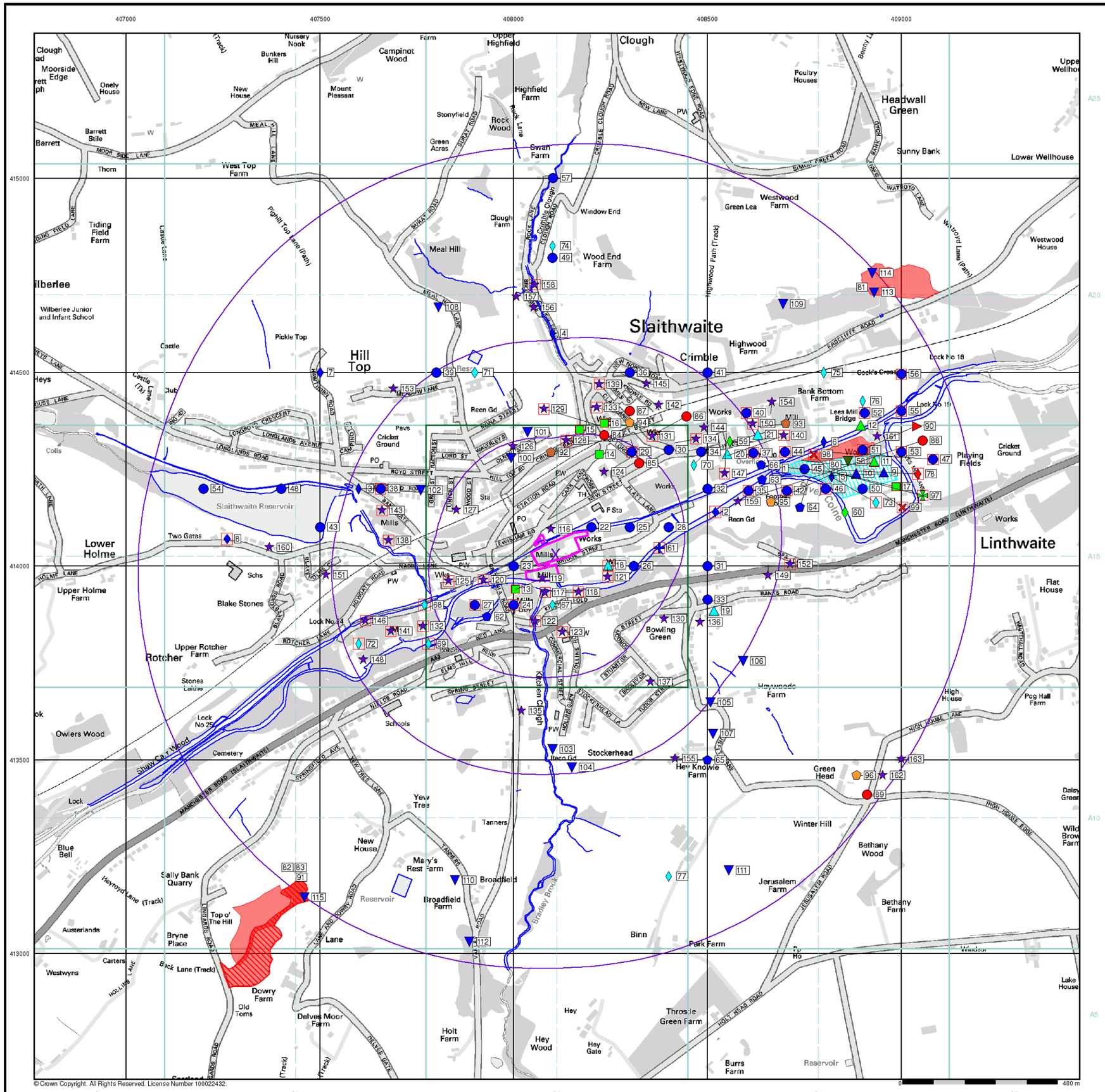
Order Details

Order Number:	43592058_1_1
Customer Ref:	12-688
National Grid Reference:	408110, 414030
Slice:	A
Site Area (Ha):	0.89

Site Details

Globe Mills, Bridge Street, Slaithwaite, Huddersfield, HD7 5JN

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



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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

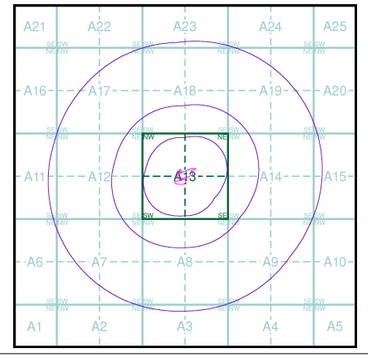
Waste

- 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
- 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

Hazardous Substances

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

Site Sensitivity Map - Slice A



Order Details

Order Number:	43592058_1_1
Customer Ref:	12-688
National Grid Reference:	408110, 414030
Slice:	A
Site Area (Ha):	0.89
Search Buffer (m):	1000

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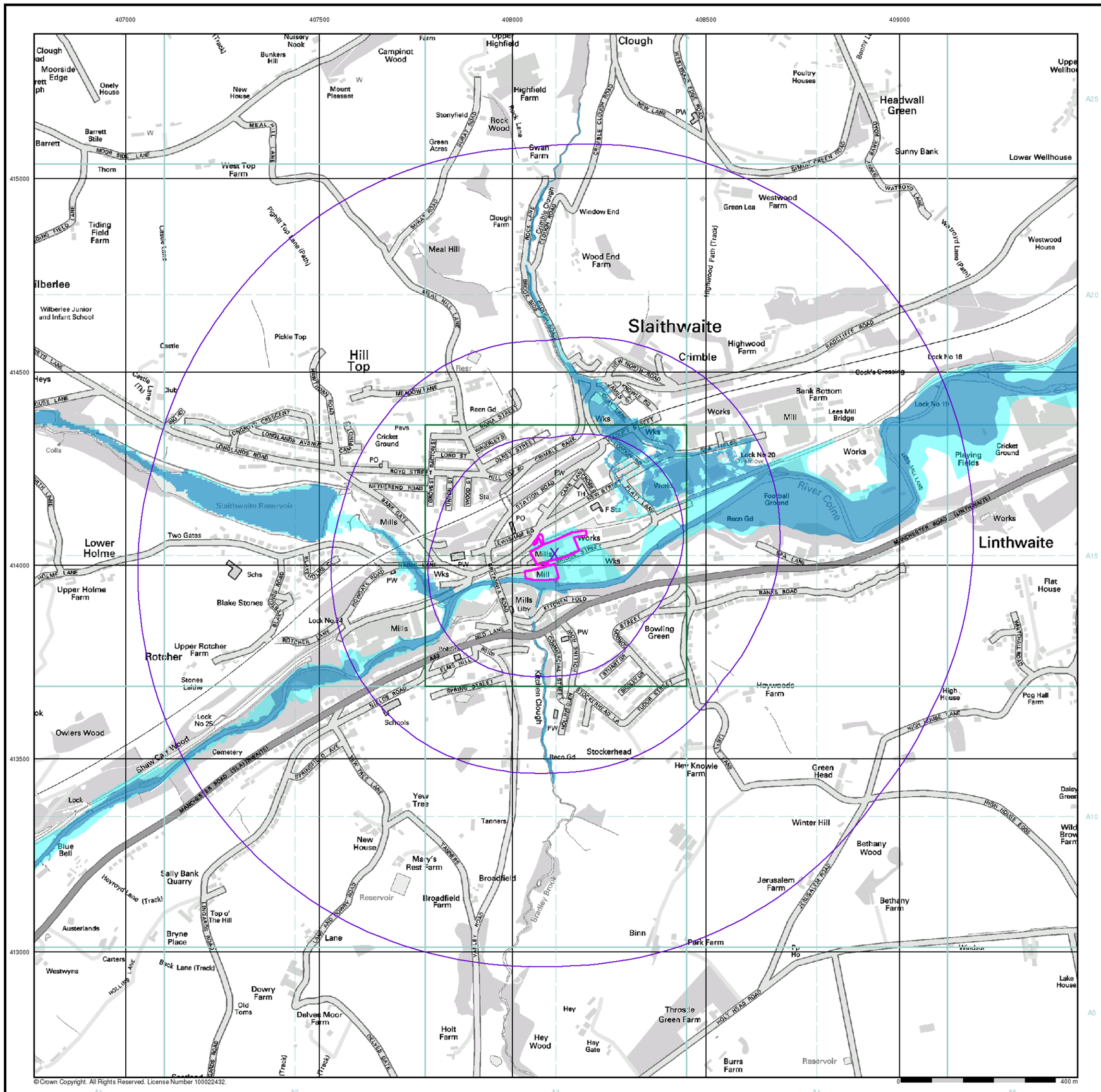


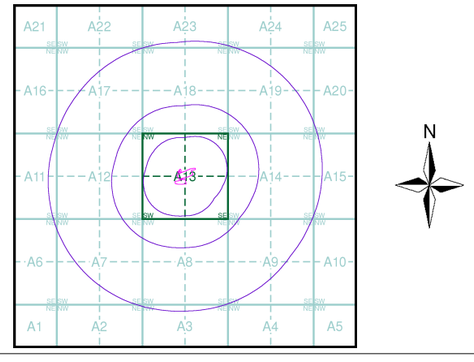
General

- Specified Site
- Specified Buffer(s)
- 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



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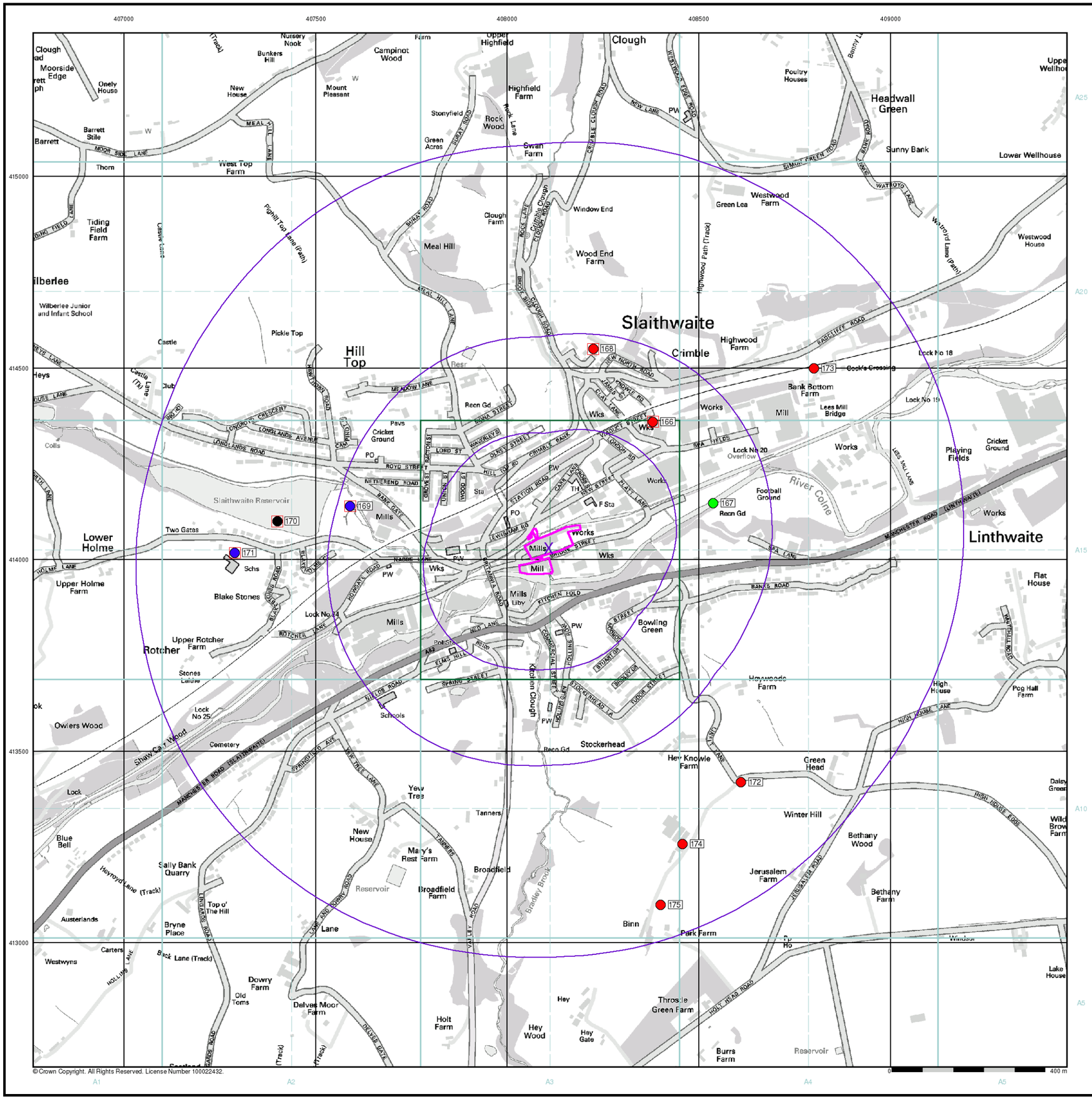


General

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

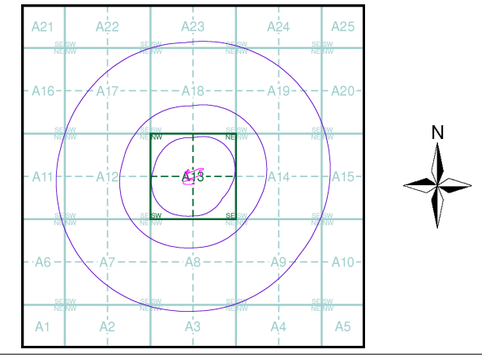
Agency and Hydrological (Boreholes)

- 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



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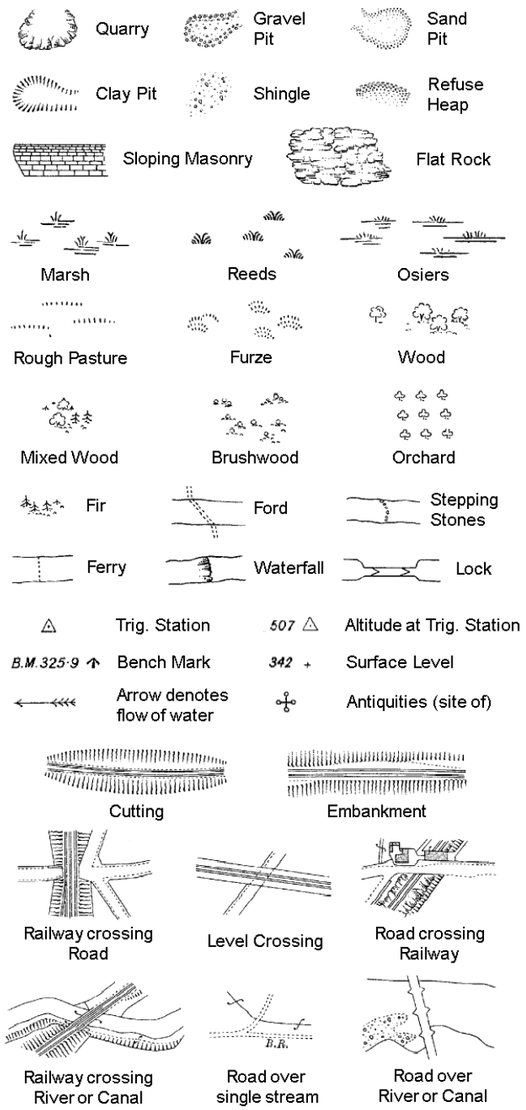
Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

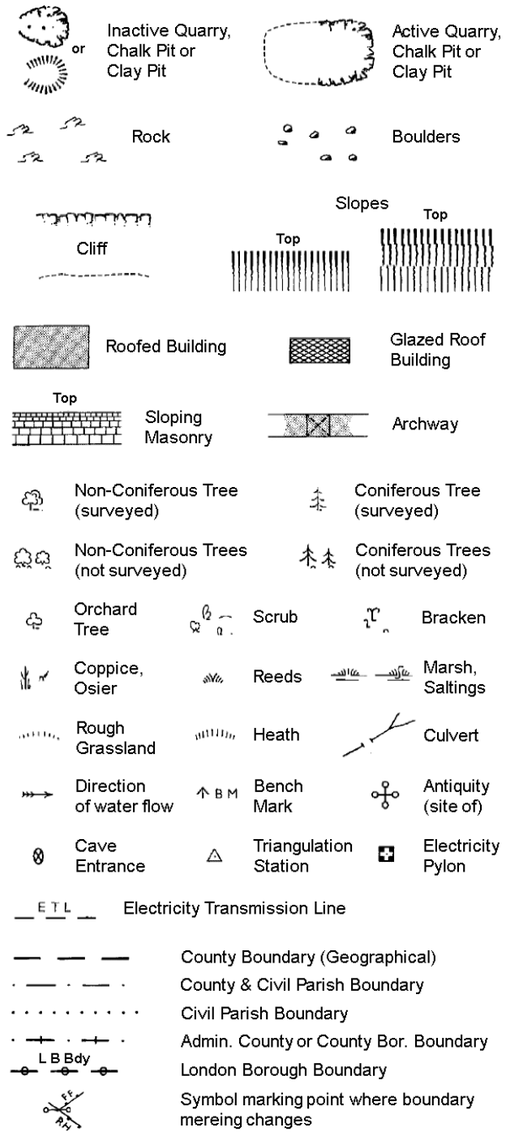
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

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

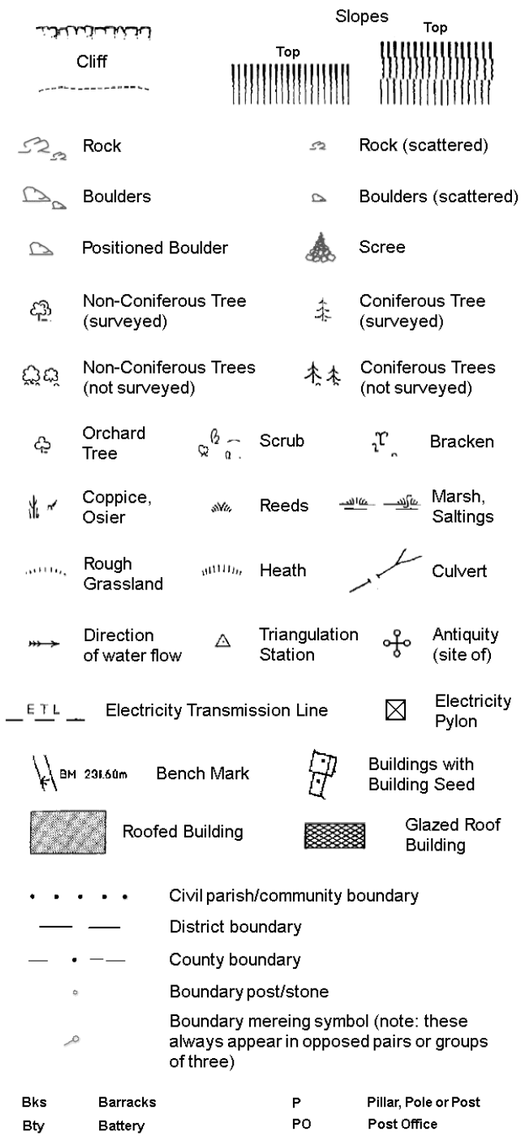
Admin. County or County Bor. Boundary

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)

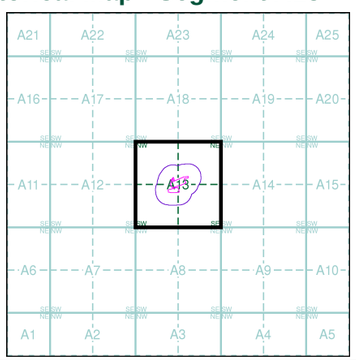
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity 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

arc environmental

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1892	2
Yorkshire	1:2,500	1906	3
Yorkshire	1:2,500	1917 - 1932	4
Ordnance Survey Plan	1:2,500	1968	5
Additional SIMs	1:2,500	1968 - 1983	6
Additional SIMs	1:2,500	1990 - 1992	7
Additional SIMs	1:2,500	1990	8
Ordnance Survey Plan	1:2,500	1992	9
Large-Scale National Grid Data	1:2,500	1993	10
Large-Scale National Grid Data	1:2,500	1994 - 1996	11

Historical Map - Segment A13



Order Details

Order Number:	43592058_1_1
Customer Ref:	12-688
National Grid Reference:	408110, 414030
Slice:	A
Site Area (Ha):	0.89
Search Buffer (m):	100

Site Details

Globe Mills, Bridge Street, Slaithwaite, Huddersfield, HD7 5JN

Landmark® Information Group

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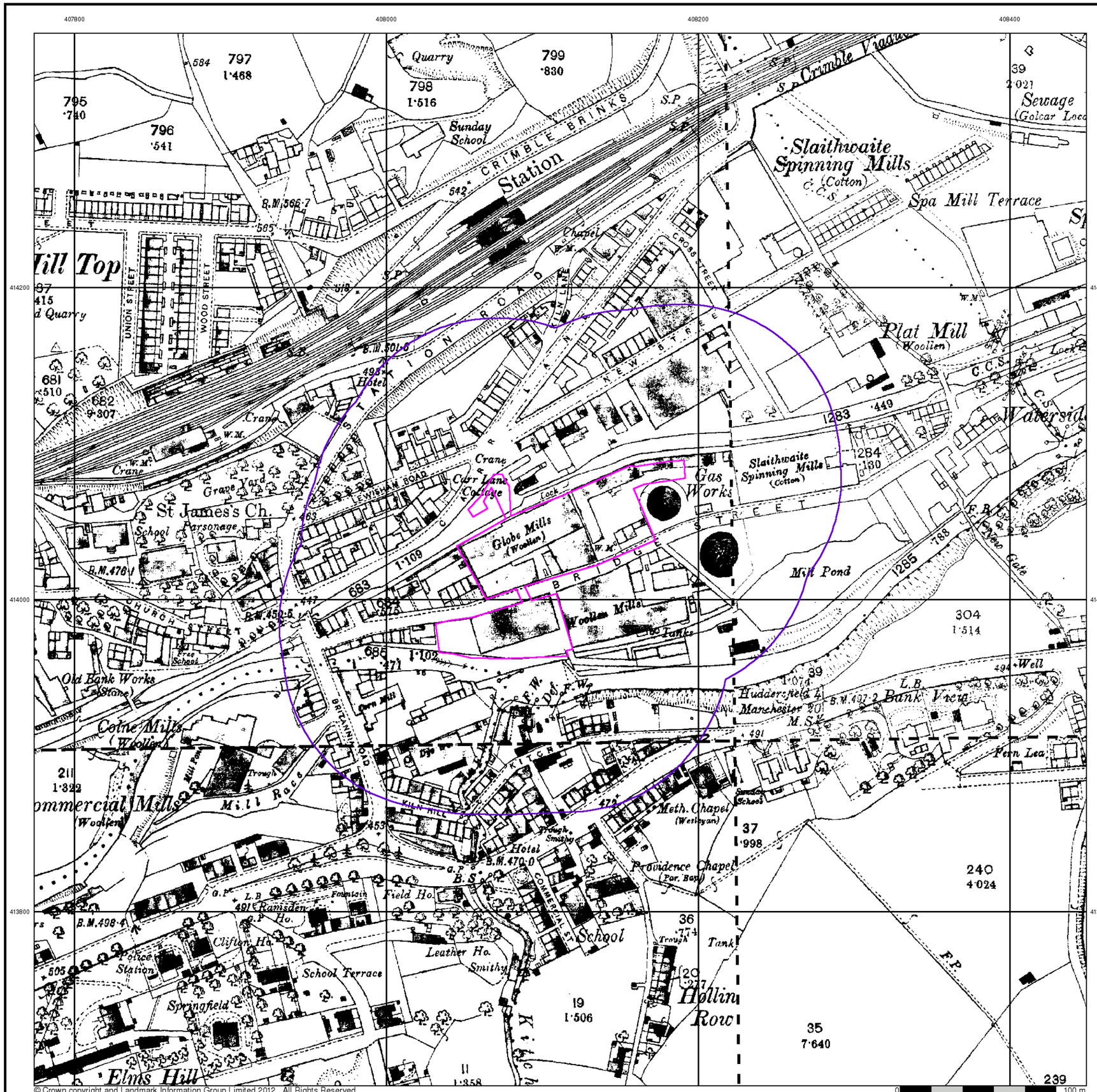


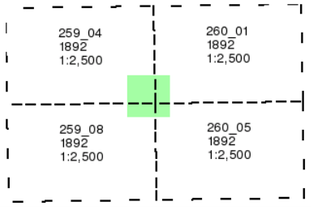
Yorkshire

Published 1892

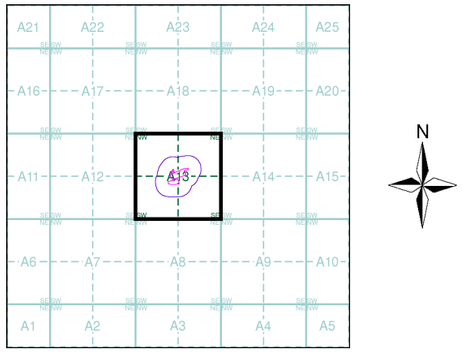
Source map scale - 1:2,500

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



Order Details

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Customer Ref:	12-688
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Slice:	A
Site Area (Ha):	0.89
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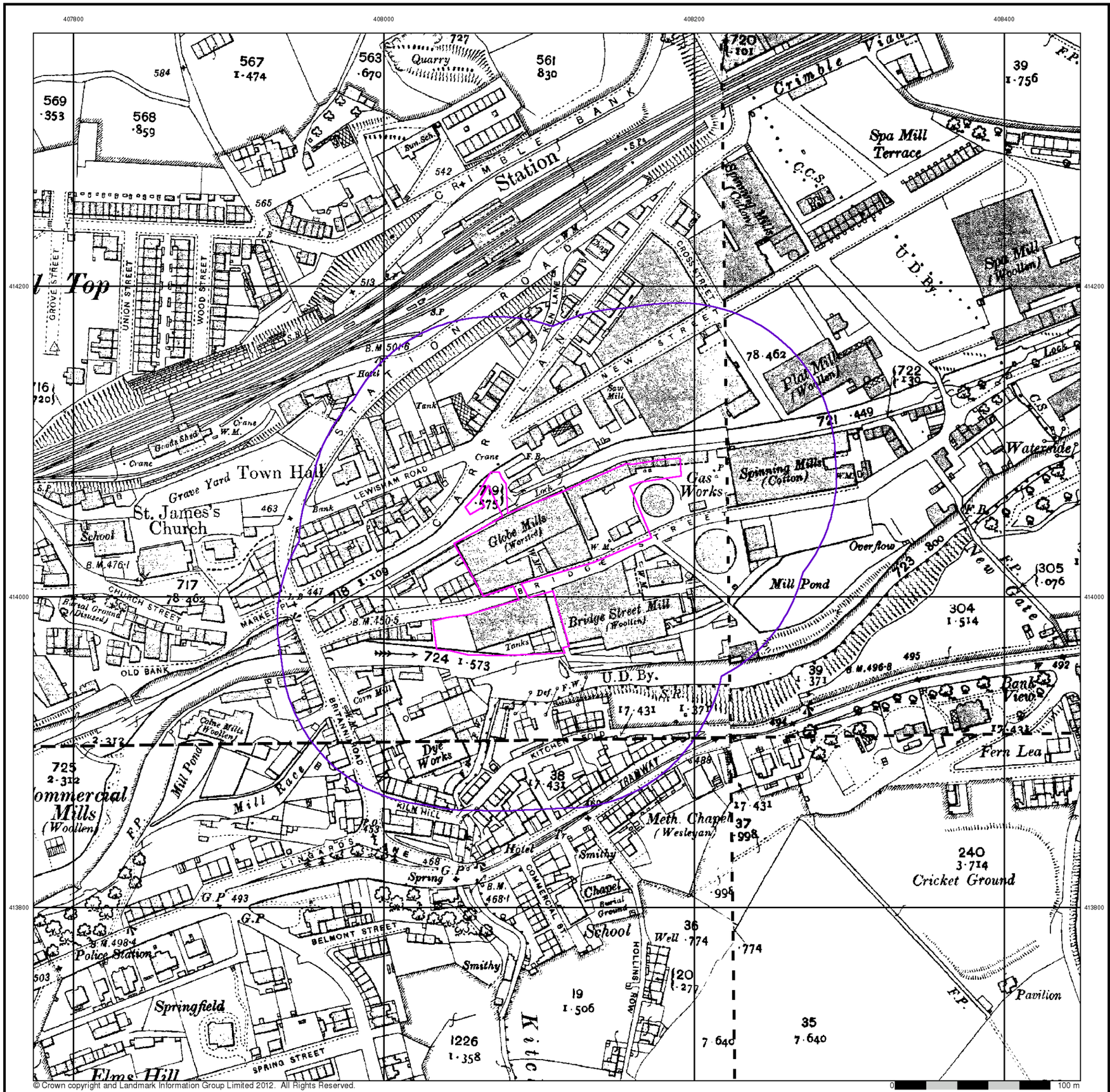

Yorkshire

Published 1906

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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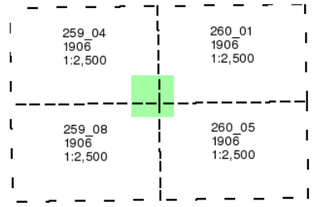
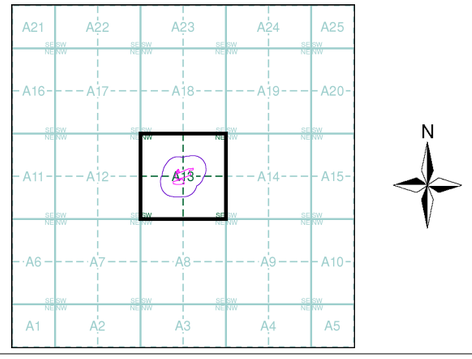


Historical Map - Segment A13



Order Details

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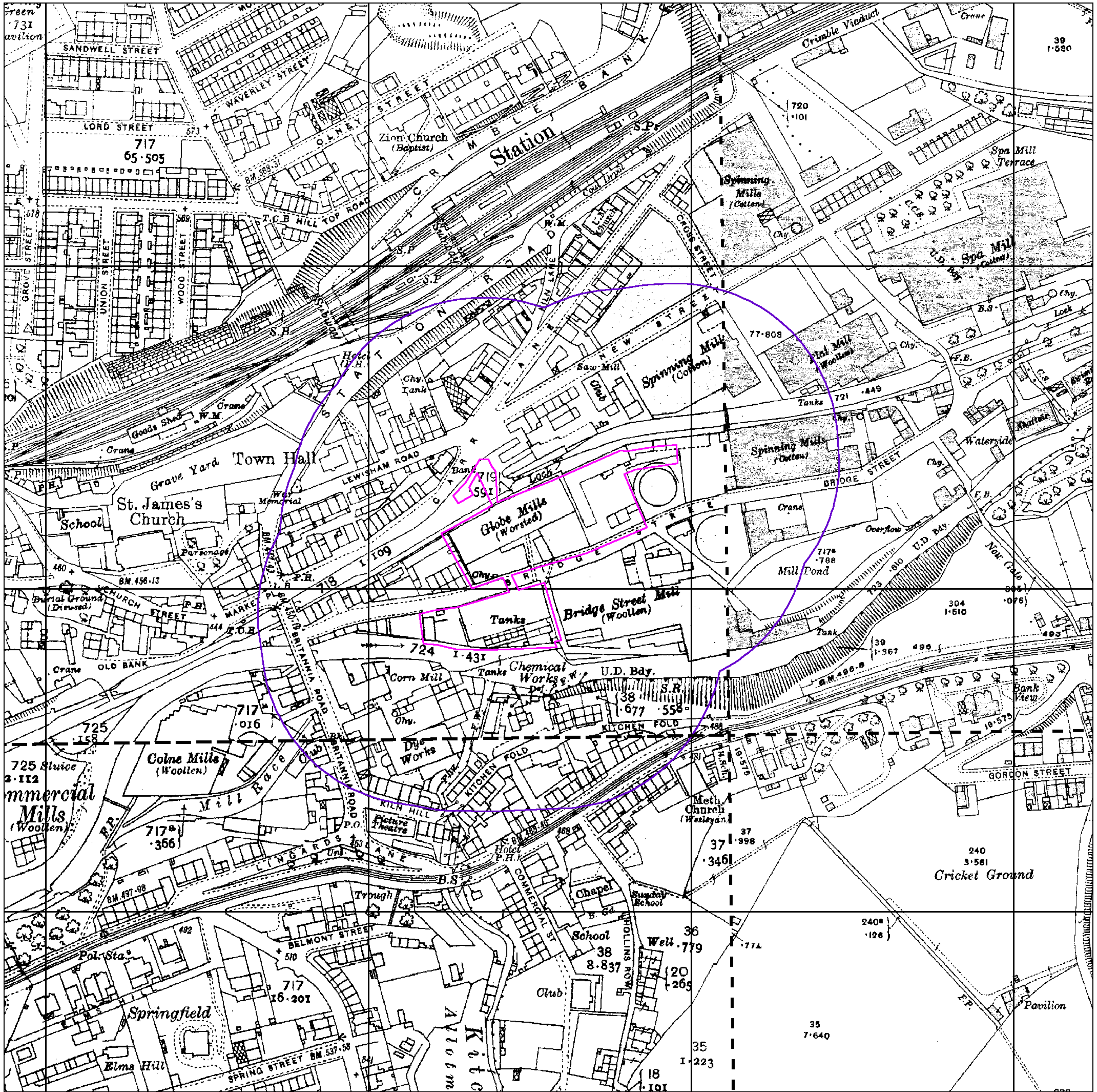

Yorkshire

Published 1917 - 1932

Source map scale - 1:2,500

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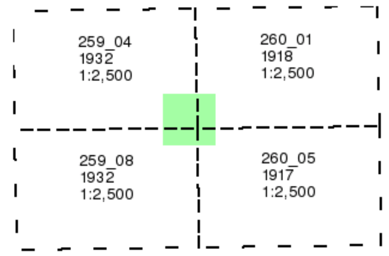
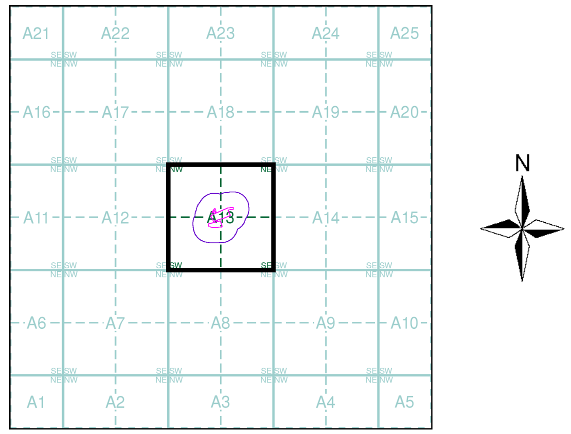
Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 43592058_1_1
Customer Ref: 12-688
National Grid Reference: 408110, 414030
Slice: A
Site Area (Ha): 0.89
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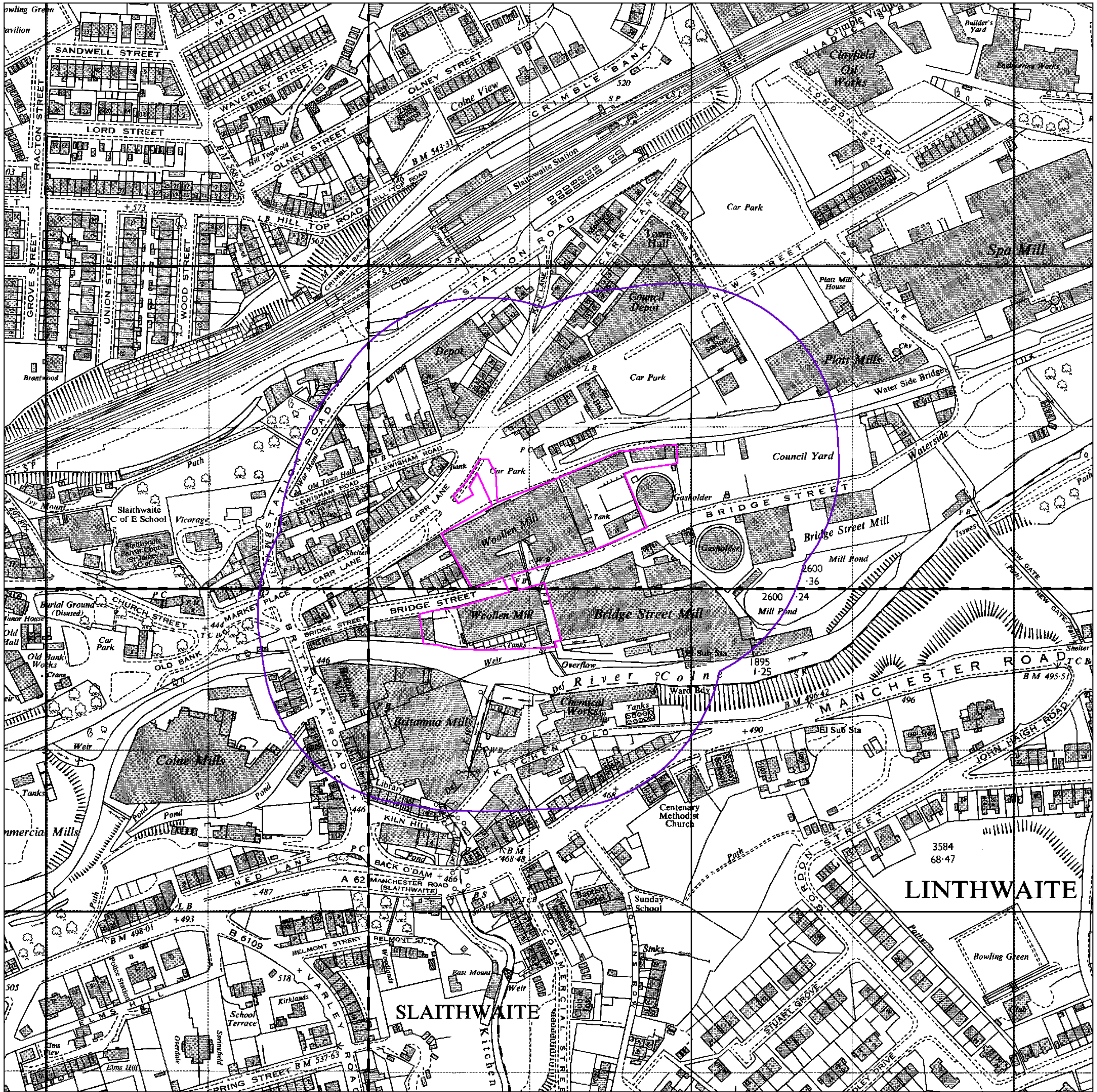

Ordnance Survey Plan

Published 1968

Source map scale - 1:2,500

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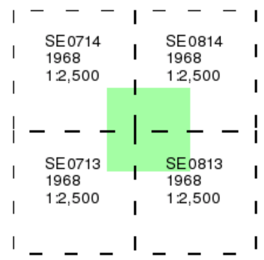

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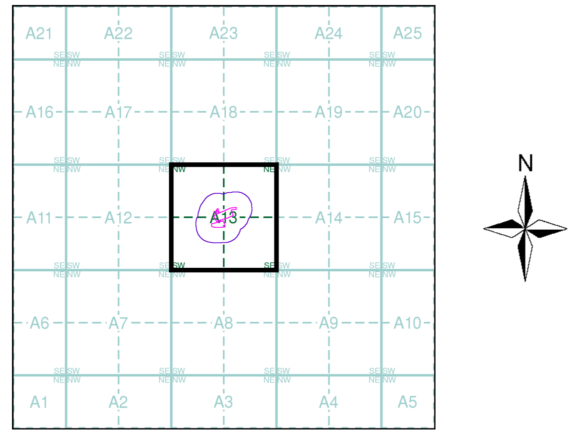

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