



# **GEO-ENVIRONMENTAL AUDIT**

## **PHASE 1 PRELIMINARY RISK ASSESSMENT**

## **PHASE 2 SITE INVESTIGATIONS**

## **PHASE 3 REMEDIATION STATEMENT**

**PROPOSED RESIDENTIAL DEVELOPMENT**  
**FORMER STAR WORKS**  
**HEYWOOD**  
**ROCHDALE**  
**OL10 4QU**

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| Revision | Date      | Reason                                   |
|----------|-----------|------------------------------------------|
| 0        | July 2026 | Original to address planning conditions. |

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## 1. PHASE 1 - PRELIMINARY RISK ASSESSMENT.

### 1.1. Introduction.

T. J. Booth Associates have been appointed by B & L Homes Ltd to compile a report on a phase 1 preliminary risk assessment (PRA), phase 2 site investigations, and to provide a phase 3 remediation statement.

The existing site is a former commercial works. The proposal is for 10No detached residential dwellings.

Planning permission has been granted under application No. 23/00876/FUL; for the: 'Construction of 10 new two storey residential dwellings following demolition of existing dilapidated buildings'. Condition No.3 on the application relates to environmental assessment, as follows:

- 3 Prior to commencement of the development an investigation and risk assessment, in addition to any assessment provided with the planning application, must be completed to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings must be produced and shall have been first submitted to and approved in writing by the Local Planning Authority before development commences. The report of the findings must include:
  - i. a survey of the extent, scale and nature of contamination
  - ii. an assessment of the potential risks to:
    - human health,
    - property (existing or proposed) including buildings, crops, livestock, pets, woodland, and service lines and pipes,
    - adjoining land,
    - groundwaters and surface waters,
    - ecological systems,
    - archeological sites and ancient monuments;
  - iii. where unacceptable risks are identified, an appraisal of remedial options and proposal of the preferred option(s)

Where the risk assessment includes a remediation strategy for the site, no dwelling shall be occupied until a verification report for that plot has been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be completed in full accordance with the approved recommendations.

Reason for Pre-commencement: For the protection of human health and the environment during the operational and construction phases of the development.

This report provides a desk-based study & intrusive ground investigation based on current UK guidance for environmental investigation within the construction industry. Principal to the assessment is the potential for contamination pollutant linkages via the Land Contamination Risk Management (LCRM) source-pathway-receptor methodology. Assessment of potential pollution linkages is primarily undertaken in strict accordance with BS 5930:2015, BS 10175:2011+A2:2017, CIRIA C665, and BS 8485:2015+A1:2019 et al.

### 1.2. Proposed Development.

The proposal is for the construction of 10No terraced residential dwellings.

The dwellings will comprise traditional masonry construction, with front elevations directly to the rear of pavement to mirror existing terraces in the local area.

The rear of the dwellings will comprise a mix of soft landscaping and patio/yard areas.

Refer to Proposed Plan in the Appendix.

### 1.3. Historic Maps.

| DATE     | ON-SITE                                                                   | OFF-SITE/SURROUNDING AREA                                                                                                   |
|----------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| c1863    | The site is part of agricultural land adjacent to Wham Lane.              | General development of terraced dwellings and cotton mills 50m to the southeast. Other mills noted approximately 50m north. |
| c1893-94 | Site appears to be within a curtilage, between Wham Street & Lord Street. | Further terraced development in the local area. Mills in the wider area larger in size.                                     |



|          |                                                                                                                                                                    |                                                                                |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| c1910    | Site now noted as Star Match Works with the works footprint taking up much of the site area apart from a small yard to the northwest corner.                       | Further development of the wider area.<br>Allotments noted across Wham Street. |
| c1929-30 | No change.                                                                                                                                                         | Further development of the wider area.                                         |
| c1937    | Star Match Works by now demolished and the site is vacant.                                                                                                         | Further development of the wider area.                                         |
| c1956-57 | Site now noted as a sheet metal works with neighbouring land to the north. The west side generally comprising buildings, and the east side the external yard area. | Almost complete urban infill locally.                                          |
| c1969    | No change.                                                                                                                                                         | Many of the mills in the wider area have now been demolished.                  |
| c1975    | Site noted as a Builders Yard.                                                                                                                                     | No change.                                                                     |
| c1985-90 | No change.                                                                                                                                                         | Almost complete urban infill primarily with residential dwellings.             |
| 1992     | No change.                                                                                                                                                         | No change.                                                                     |

#### 1.4. Present Day Maps.

|                                                        |                                                                                                                                                     |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Site boundaries, outlines of structures and buildings: | Present day maps show the main buildings to the west side fronting Wham Street, to the south boundary, with the yard and entrance to the east side. |
| Ground contours, natural drainage features:            | Land elevation falls to the north.                                                                                                                  |
| Watercourses:                                          | The River Roch is the closest watercourse approximately 650m north.                                                                                 |
| Below ground obstructions:                             | None indicated on current maps.                                                                                                                     |

#### 1.5. Geology.

|                      |                                                                                                                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Superficial geology: | Most of the local area surrounding and beneath the site comprise Devensian Till. However, there is a small area of glaciofluvial sand & gravels cover close to the south site boundary.                   |
| Bedrock geology:     | The local area is underlain by Westphalian undifferentiated Coal Measures (sandstone & mudstone).                                                                                                         |
| Coal seams:          | The Arley Mine coal seam subcrops approximately 300m N. Due to dip, distance and ground level change, the seam is estimated to lie at not less than 65m below site GL (not accounting for glacial cover). |

#### 1.6. Boreholes Records.

No relevant boreholes in close proximity to the site boundaries.

#### 1.7. Landmark Envirocheck.

##### 1.7.1. Agency & Hydrological.

|                                                   |                                      |
|---------------------------------------------------|--------------------------------------|
| Contaminated land register entries & notices:     | No records within a 250m radius.     |
| Discharge consents:                               | No records within a 250m radius.     |
| Local authority pollution prevention and control: | There was 1 record noted 156m south. |

|                                               |                                      |
|-----------------------------------------------|--------------------------------------|
| Bedrock aquifer:                              | Secondary A.                         |
| Superficial aquifer:                          | Secondary Undifferentiated.          |
| Source protection zone:                       | Not within a Source Protection Zone. |
| Contaminated land register entries & notices: | No records within a 250m radius.     |

### 1.7.2. Waste.

|                              |                                                                |
|------------------------------|----------------------------------------------------------------|
| BGS recorded landfill sites: | No waste or landfill sites were recorded within a 250m radius. |
| Historical landfill sites:   | No waste or landfill sites were recorded within a 250m radius. |
| Registered landfill sites:   | No waste or landfill sites were recorded within a 250m radius. |

### 1.7.3. Hazardous Substances.

|                                            |                                  |
|--------------------------------------------|----------------------------------|
| Planning hazardous substance consents:     | No records within a 250m radius. |
| Planning hazardous substance enforcements: | No records within a 250m radius. |

## 1.8. Groundsure.

### 1.8.1. Geological.

|                                           |                                                             |
|-------------------------------------------|-------------------------------------------------------------|
| Potential for shrinking or swelling clay: | Very low risk.                                              |
| Potential for running sands:              | Very low risk.                                              |
| Potential for compressible deposits:      | Negligible risk.                                            |
| Potential for collapsible deposits:       | Very low risk.                                              |
| Potential for landslides:                 | Very low risk.                                              |
| Potential for ground dissolution:         | Negligible risk.                                            |
| Mining & ground workings:                 | No records beneath the site or in the immediate local area. |
| Radon records:                            | Less than 1% at or above the action level.                  |
| Radon protection:                         | None required.                                              |

## 1.9. Coal Authority.

|                                   |                                          |
|-----------------------------------|------------------------------------------|
| Entries, Adits, Shafts.           | No shafts within the local area.         |
| Past Recorded Underground Mining. | No records of coal worked at depth.      |
| Shallow Unrecorded Mining.        | None noted.                              |
| Shallow Recorded Mining.          | None noted.                              |
| Development High Risk Area.       | Not within a Development High Risk Area. |
| Entries, Adits, Shafts.           | No shafts within the local area.         |

## 1.10. Past/Historic Site Investigation Records.

### 1.10.1. Adjacent Site 2020.

#### 1.10.1.1. Conceptual Model.

TJ Booth Associates previously undertook an assessment of the site immediately to the north, which through the site history was part of the same site/curtilage until developed relatively recently.

The conceptual model undertaken for the assessment of that site is noted below:

#### 13. CONCEPTUAL MODEL

| CURRENT SOURCE/S                                       | ORIGINAL ASSOCIATED USAGE                                  | CONTAMINANT TYPE                                           | PATHWAY                                                                                                | RECEPTOR                                                         | POLLUTION LINKAGE                                                                                                                                                                                                                     | CONSEQUENCE | PROBABILITY      | RISK           |
|--------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|----------------|
| Site surface /sub soil.                                | Brownfield site – past commercial processes & development. | Chemical contamination.                                    | Direct ingestion, aerial ingestion, dermal contact, drinking water.<br>Contact with potential hazards. | Site construction operatives & future occupants. Site buildings. | PRESENT – Potential for made ground to comprise shallow ground contamination which is likely to persist.                                                                                                                              | Medium.     | High likelihood. | High risk.     |
| Geological ground gas.                                 | Coal seams & radon sources.                                | CH <sub>4</sub> , CO <sub>2</sub> , Rn, other trace gases. | Diffusion through soil, substructures, aerial inhalation.                                              | Future occupants. Explosion, suffocation.                        | NOT PRESENT – Site within a BGS/HPA Class 1 Radon Area. No coal seams within shallow depth, no adits or shafts close by.                                                                                                              | Minor.      | Unlikely.        | Very low risk. |
| Anthropogenic ground gas.                              | Decomposing organic material in the ground.                | CH <sub>4</sub> , CO <sub>2</sub> , other trace gases.     | Diffusion through soil, substructures, aerial inhalation.                                              | Future occupants. Explosion, suffocation.                        | NOT PRESENT – No landfill site within 250m of the development, no evidence of infilling or organic material in the ground locally.                                                                                                    | Minor.      | Unlikely.        | Very low risk. |
| Contaminated ground /surface water. Controlled Waters. | Brownfield site – past commercial processes & development. | Chemical contamination.                                    | Permeation through soil into ground water, local watercourses or aquatic habitats.                     | Watercourse s, aquatic habitats & associated wildlife.           | NOT PRESENT – Shallow ground contamination if present is likely to be minor, & expected contaminants generally immobile. Site not within a Source Protection Zone & no watercourses or aquatic habitats locally. Pathway not present. | Minor.      | Unlikely.        | Very low risk. |
| Aerial contaminants.                                   | Local industrial activity.                                 | Chemical contamination.                                    | Dermal contact & aerial inhalation.                                                                    | All site users / occupants.                                      | NOT PRESENT – Any historic contamination related to aerial contamination will now be recorded as shallow contamination. Current aerial discharges are regulated.                                                                      | Minor.      | Unlikely.        | Very low risk. |

#### 1.10.1.2. Site Investigations 18.11.2020.

Site investigations were undertaken comprising 3No. machine excavated trial holes (THs 1-3) to assess the ground for geo-environmental and geotechnical purposes.

The existing site finish level was elevated from the surrounding pavements to a max height of approximately 1m from the alleyway to the north side (ground level falls locally to the north).

The site stratigraphy comprised the following (refer to trial hole logs in appendix):

- A sandy ashy MADE GROUND with building rubble to approx. 1m deep;
- Firm becoming firm to stiff CLAY to approx. 2m deep;
- Firm to stiff shaley CLAY to approximately 3m deep.

Four soil samples (S1-4) were collected to categorise made ground. No visual/olfactory evidence of hydrocarbon contamination was noted on site.

Soil samples were sealed in 1kg white plastic snap top containers & amber jars, and sent to Chemtest Ltd to be tested for the following contaminant suites: metals, speciated PAH, inorganics & sulphates, SOM, and asbestos screening.

#### 1.10.1.3. Soil Sampling Assessment

On return the sample results were assessed by TJ Booth Associates to common threshold comparison data, specifically the Defra Category 4 Screening Levels (C4SLs) where available, then to the LQM/CIEH (S4ULs) thereafter.

Existing MADE GROUND samples tested above the threshold for metals, PAH, and inorganics; specifically: arsenic, lead, sulphate, asbestos, benzo(b)fluoranthene, and dibenz(ah)anthracene.

### 1.11. Application Site Reconnaissance (June 2026).

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Details of Existing Structures:                                                | <p>The entrance was located to the east side of the site from Duke Street to the central entrance yard.</p> <p>The building lined the west side of the site, and comprised a two-storey masonry works structure, with adjoining steel frame &amp; plastisol cladded extension to the south side.</p> <p>To the south site boundary was an old masonry works building, and immediately to the north of this was an open fronted garage or similar storage structure with concrete floor slab. To the east side of this were two older sheds with asbestos roofs.</p> <p>The central yard comprised a mix of unmade surfacing, macadam, concrete &amp; old stone setts.</p> <p>There was general tipping around the site from recent removal of fixtures and furnishing left inside the buildings, but nothing specifically contaminating noted.</p> <p>There was no evidence of tanks or other contaminative structures noted.</p> |
| Adjacent Properties:                                                           | Residential dwellings to all sides except the commercial premises to the South.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Water Levels, Directions of Flow and Rates in Rivers:                          | None noted on site reconnaissance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Old Mine or Quarry Workings:                                                   | None noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Obvious/Immediate Hazards to Health/Safety:                                    | Site buildings dilapidated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Areas of Discoloured Soil, Polluted Water, Vegetation, and Significant Odours: | <p>Unmade surfacing to parts of the site.</p> <p>Made ground apparent in these areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### 1.12. Identification of Source-Pathway-Receptor.

#### 1.12.1. Environmental Summary.

The Application Site was part of agricultural land from earliest mapping data c1851 until c1890s when it was noted as part of Star Boiler Works between Wham Street & Lord Street (later Duke Street), with a small building noted to the north-west corner and the remainder occupied by a yard.

By 1910 additional buildings were noted which were part of Star Match Works.

The site buildings were demolished by 1937, and the replacement works was a sheet metal factory noted in the 1950s. The site was later noted to be a builder's yard from c1975.

The local area has predominantly been residential, with mills and associated infrastructure were nominally >100m distant.

The adjacent site immediately to the north of the current Application Site was investigated with trial holes and soil sampling c2020. That site was noted to comprise made ground, predominantly ashy sand & gravel MADE GROUND, on top of virgin CLAYS to 3m deep.

Contamination of the site to the north was noted in the upper MADE GROUND. Chemical analysis of soil samples recorded levels above threshold limits for metals, PAH, and inorganics; specifically: arsenic, lead, sulphate, asbestos, benzo(b)fluoranthene, and dibenz(ah)anthracene.

It can only be assumed that the current Application Site is likely to be contaminated with the same contaminants & general fill material, and will need to be remediated with cover soils in garden areas.

Regarding coal mining risk, the closest seam to underlie the site is estimated to lie at least 60m depth. The thickness of the local superficial cover is not known and thus has not been added to the depth estimate. The site is not within a Development High Risk Area.

No landfills were noted within 250m.

The latest radon maps indicate the site is within a lower radon potential area with <1% of properties at or above the action level. No radon protection measures are required.



### 1.12.2. Potential Contaminant Sources.

| ORIGINAL SOURCE               | ASSOCIATED | CONTAMINANT/S                      |
|-------------------------------|------------|------------------------------------|
| General existing made ground. |            | Metals, PAHs, sulphates, asbestos. |
| Asbestos sheet roofing etc.   |            | Asbestos.                          |

### 1.12.3. Potential Pathways.

| PATHWAY                                        | MEDIA                |
|------------------------------------------------|----------------------|
| Soil and dust ingestion                        | Soil and indoor dust |
| Consumption of home-grown fruit and vegetables | Produce              |
| Skin contact (indoors)                         | Indoor dust          |
| Skin contact (outdoors)                        | Soil                 |
| Inhalation of dust (indoors)                   | Air                  |
| Inhalation of dust (outdoors)                  | Air                  |
| Vapours (indoors)                              | Air                  |
| Vapours (outdoors)                             | Air                  |

### 1.12.4. Potential Receptors.

Human: Future residential users & construction phase workforce.

Controlled waters: None noted.

## 1.13. Preliminary Conceptual Model.

| POLLUTANT RISK IDENTIFIER | SOURCE                                                                                                             | CONTAMINANT TYPE                                                                 | PATHWAY                                                                     | RECEPTOR                                                                     | POLLUTION LINKAGE                                                                                                                                                                                                                                     | CONSEQUENCE | PROBABILITY      | RISK                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|-----------------------|
| PL1                       | General contaminants in upper site soil/made ground, and effects on humans/animals /ecology as a receptor.         | Metals, PAHs, inorganics, organics, asbestos, hydrocarbons if suspected.         | Direct ingestion, aerial ingestion, dermal contact, drinking water. Crops.  | Primarily human - Site construction operatives & future worker & site users. | To be confirmed by site investigations.                                                                                                                                                                                                               | Medium.     | High likelihood. | Very high risk.       |
| PL2                       | Potential for mortars/plasters and associated effects on concrete.                                                 | Sulphates.                                                                       | Contact with underground structures.                                        | Building structures /concrete.                                               | To be confirmed by site investigations.                                                                                                                                                                                                               | Medium.     | High likelihood. | Very high risk.       |
| PL3                       | Potential historic use of hazardous PSRAS chemicals & effects on PE water pipes.                                   | Hydrocarbons, BTEX & MTBE, VOCs/SVOCs, phenols, cresols and chlorinated phenols. | Contact with water pipes/services.                                          | Water pipes/services & human/pet end users.                                  | No specific sources noted in the data or historic map search, but considered possible due to historic uses.<br>To be confirmed by site investigations.                                                                                                | Medium.     | Low likelihood.  | Moderate to low risk. |
| PL4                       | Hydrocarbon contaminants in upper site soil/made ground, and effects on groundwater or watercourses as a receptor. | Potential hydrocarbons.                                                          | Groundwater via potential leaching and transport of potential contaminants. | Underlying aquifer or watercourse as a receptor.                             | No specific sources noted in the data or historic map search, but considered possible due to historic uses.<br>Pathway assumed to be mitigated due to underlying CLAY subsoils noted on the adjacent site.<br>To be confirmed by site investigations. | Medium.     | Low likelihood.  | Moderate to low risk. |
| PL5                       | Geological ground gas from coal seams/workings.                                                                    | CH <sub>4</sub> , CO <sub>2</sub> , other trace gases.                           | Diffusion through soil, substructures, aerial inhalation.                   | Human - future residential occupants. Site Explosion, suffocation.           | No source and therefore no pollutant linkage.                                                                                                                                                                                                         | Medium.     | Unlikely.        | Low risk.             |



|     |                                                                                                    |                                                        |                                                           |                                                                    |                                                                                                                                                                                    |         |           |           |
|-----|----------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|-----------|
| PL6 | Geological ground gas, radon sources in Namurian deposits.                                         | Rn.                                                    | Diffusion through soil, substructures, aerial inhalation. | Human residential occupants. - future Site                         | The property has a low risk of radon (<1% of homes at or above the action level).<br>Radon protective measures are not necessary.<br>No source and therefore no pollutant linkage. | Medium. | Unlikely. | Low risk. |
| PL7 | Anthropogenic ground gas from historic/present landfill, infilled mill ponds & onsite made ground. | CH <sub>4</sub> , CO <sub>2</sub> , other trace gases. | Diffusion through soil, substructures, aerial inhalation. | Human residential occupants. - future Site Explosion, suffocation. | No source and therefore no pollutant linkage.                                                                                                                                      | Medium. | Unlikely. | Low risk. |
| PL8 | Alluvial ground gas.                                                                               | CH <sub>4</sub> , CO <sub>2</sub> .                    | Diffusion through soil, substructures, aerial inhalation. | Human residential occupants. - future Site Explosion, suffocation. | Alluvial deposits not shown in the local area.<br>No source and therefore no pollutant linkage.                                                                                    | Medium. | Unlikely. | Low risk. |
| PL9 | Peat.                                                                                              | CH <sub>4</sub> , CO <sub>2</sub> .                    | Diffusion through soil, substructures, aerial inhalation. | Human residential occupants. - future Site Explosion, suffocation. | Peat deposits are over 250m from the development.<br>No source and therefore no pollutant linkage.                                                                                 | Medium. | Unlikely. | Low risk. |

## 2. PHASE 2 – SITE INVESTIGATIONS & ASSESSMENT.

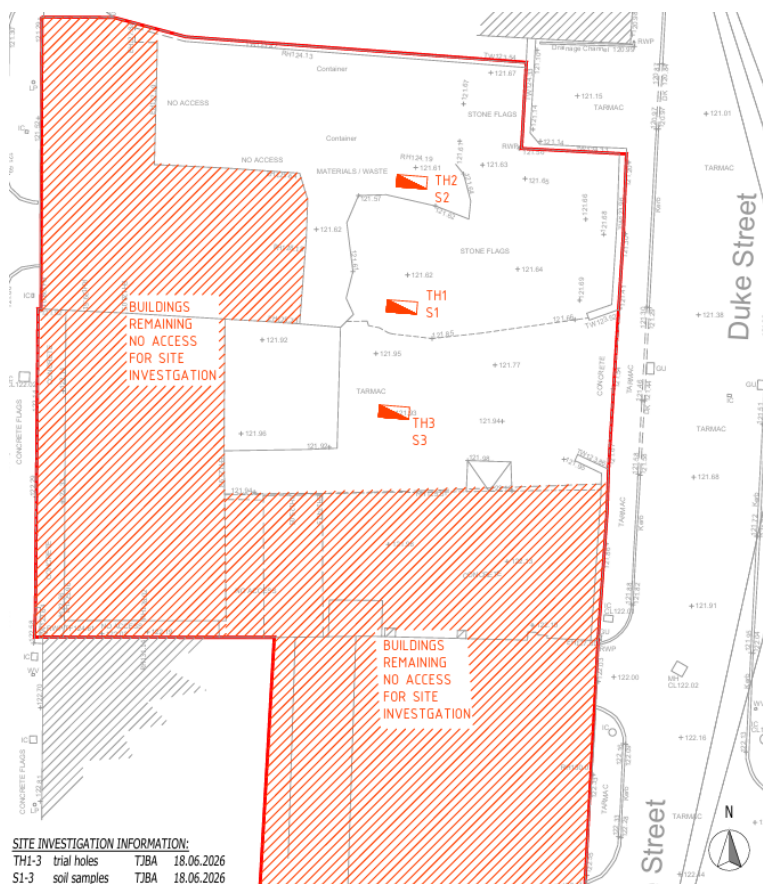
### 2.1. Site Investigations.

#### 2.1.1. Investigation Summary.

Recent site investigation to address potential contamination of upper soils was undertaken on the 18.06.2026 by T J Booth Associates. The investigations comprised 3No. trial holes (THs1-3), and 3No. soil samples (S1-3); to assess general chemical contamination for geoenvironmental purposes.

The trial holes were taken at nominally equidistant locations through the available external yard areas. Additional trial holes could not be undertaken due to existing buildings taking up much of the site footprint.

The full Site Investigation Plan can be found in the Appendix, excerpt below:



#### 2.1.2. Soil stratigraphy.

##### 2.1.2.1. Made Ground.

The upper site soil comprised MADE GROUND generally made up of a gravelly sand fill of building rubble – brick, stone, slate, concrete, mortar etc – especially around THs1 & 2.

In the area of TH3, nominally 400mm of ashy MADE GROUND with a hydrocarbon odour was noted.

##### 2.1.2.2. Superficial.

Beneath the made ground was a soft to firm becoming stiff light brown-grey mottled CLAY to a depth of 1.2m.

The CLAY found corroborated the subsoil found on the adjacent site to the north in past investigations c2020, where it was noted to a depth of approximately 3m.

##### 2.1.2.3. Bedrock.

Bedrock was not encountered.

## 2.2. Final Risk Assessment.

### 2.2.1. Human Health Risk.

#### 2.2.1.1. Shallow soil contamination.

The samples results have been assessed by TJ Booth Associates to common threshold comparison data for a residential end usage in the following order: Defra Category 4 Screening Levels (C4SLs) > LQM/CIEH (S4ULs) > EIC/AGS/CL:AIRE 2010.

Soil samples were taken in the MADE GROUND horizon in each trial hole, and sent to Envirolab Ltd to be analysed for a range of common contaminants.

The standard contaminant suites are metals, PAH speciated, inorganics, SOM & asbestos screen.

Additional TPH analysis was undertaken on TH3/S3 where hydrocarbons contamination was suspected, and also TH2/S2 to show if there was any lateral mobile hydrocarbon migration.

Chemical analysis recorded the following determinands above the residential threshold GACs:

- S1: Arsenic, lead, sulphate (outlier & just on the threshold from DS1 to DS2), asbestos.
- S2: Lead only.
- S3: Arsenic, lead, sulphur (outlier), naphthalene (outlier), hydrocarbons (aromatics EC10-12, EC12-16, & EC16-21).

Hydrocarbons were only associated with made ground in TH3/S3 & had not migrated down gradient. Due to the above, there is a risk and garden soils should be remediated.

##### 2.2.1.1.1. Water pipes.

While not all of the PSRAS contaminants have been analysed for site soils at this stage, there is some hydrocarbon contamination noted which would be in excess of the standard polyethylene pipe threshold levels.

The exceedance levels are for the following:

- Total BTEX & MTBE.
- Hydrocarbons EC5-10.
- Hydrocarbons EC10-16.
- Hydrocarbons EC16-40.

However, the contamination is noted to the centre of the site within the current yard area, and is limited to around TH3. The contamination is also shallow, c400mm deep, and will need to be removed from site (removing the source material).

Also, in the proposed layout, the site layout is for terraced style residential dwellings to which will front onto back of pavement. This will ensure water services will only be connected from the pavements and straight into the dwellings, which will negate contaminant pathways to end users.

This will need to be conformed in the final stages of water pipe connection & with an application to connect to the UU water network via UU PSRAS applications.

#### 2.2.1.2. Ground Gas Risk.

##### 2.2.1.2.1. Historic landfill & off-site infilled land.

No risk to the site.

No protection measures are required in the development.

##### 2.2.1.2.2. On-site refuse tips/infilled ponds/infilled land.

No risk to the site.

No protection measures are required in the development.

##### 2.2.1.2.3. Radon.

The property is within a low probability radon area (<1% of homes are estimated to be at or above the action level).

No radon protection measures are required.

##### 2.2.1.2.4. Alluvium.

No risk to the site.

No protection measures are required in the development.

#### **2.2.1.2.5. Peat deposits.**

No risk to the site.

No protection measures are required in the development.

### **2.2.2. Buildings.**

#### **2.2.2.1. Sulphate.**

The only slight exceedance was in sample S1 at 0.24% (considered an outlier & just on the threshold from DS1 to DS2). The site mean & t95 were DS1.

The results suggest the risk is low.

### **2.2.3. Controlled Waters Risk.**

#### **2.2.3.1. Aquifers & Watercourses.**

Unproductive clay superficial aquifer beneath.

No watercourses in the immediate locality.

No pollutant linkage noted.

## 2.3. Final Conceptual Model.

| POLLUTANT RISK IDENTIFIER | SOURCE                                                                                                             | CONTAMINANT TYPE                                                                 | PATHWAY                                                                     | RECEPTOR                                                                     | POLLUTION LINKAGE                                                                                                                                                                     | RISK            | REMEDIAL MEASURES                                                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PL1                       | General contaminants in upper site soil/made ground, and effects on humans/animals/ecology as a receptor.          | Metals, PAHs, inorganics, organics, asbestos, hydrocarbons if suspected.         | Direct ingestion, aerial ingestion, dermal contact, drinking water. Crops.  | Primarily human - Site construction operatives & future worker & site users. | Recorded in multiple samples. Hydrocarbons noted in the location of TH3/S3.                                                                                                           | Very high risk. | REMEDIAL MEASURES REQUIRED:<br>Soft landscaped/garden areas will have to undergo remedial measures.<br><br>Remedial measure will need either a 600 cover above made ground,<br><br>OR<br>Excavation and removal of made ground to virgin clay & replacement with a clean, inert subsoil/topsoil. |
| PL2                       | Potential for mortars/plasters and associated effects on concrete.                                                 | Sulphates.                                                                       | Contact with underground structures.                                        | Building structures /concrete.                                               | Slight elevation noted in sample S1, but was on the threshold boundary of DS1 to DS2, and is considered an outlier. The site average and t95 both showed levels at DS1.               | Low risk.       | NO REMEDIATION REQUIRED.                                                                                                                                                                                                                                                                         |
| PL3                       | Potential historic use of hazardous PSRAS chemicals & effects on PE water pipes.                                   | Hydrocarbons, BTEX & MTBE, VOCs/SVOCs, phenols, cresols and chlorinated phenols. | Contact with water pipes/services.                                          | Water pipes/services & human/pet end users.                                  | There is a risk to water pipes but only in the centre of the site.                                                                                                                    | Moderate risk.  | REMEDIAL MEASURES REQUIRED:<br><br>Water pipes will likely be routed from the pavement, and the hydrocarbon contamination should be removed from the centre of the site, so the risk should be mitigated.<br><br>Risk rating increased to moderate until confirmed.                              |
| PL4                       | Hydrocarbon contaminants in upper site soil/made ground, and effects on groundwater or watercourses as a receptor. | Potential hydrocarbons.                                                          | Groundwater via potential leaching and transport of potential contaminants. | Underlying aquifer or watercourse as a receptor.                             | Underlying receptor is stiff CLAY which is unproductive, and therefore no pathway to aquifers.<br><br>Contamination appears isolated, and not mobile.<br><br>No watercourses locally. | Low risk.       | NO REMEDIATION REQUIRED.                                                                                                                                                                                                                                                                         |

### 3. REMEDIATION STATEMENT.

#### 3.1. Basic Site Details.

##### 3.1.1. General.

Full details included in the Phase 1 & 2 PRA/Site Investigation Introduction & subsequent sections.

##### 3.1.2. Conceptual Model (Final) & Relevant Pollution Linkages.

Risks have been identified in the conceptual model, and remediation measures will need to be undertaken to mitigate the risk to the proposed end user.

Three pollutant linkages were noted in the assessment, and are as follows:

- PL1      General contaminants in upper site soil/made ground, and effects on humans/animals/ecology as a receptor.  
 PL3      Potential historic use of hazardous PSRAS chemicals & effects on PE water pipes.

#### 3.2. Detailed Remedial Measures.

##### 3.2.1. PL1 – Made ground/soil.

Hydrocarbon contaminated soils recorded around TH3 should be removed from site and disposed of to a suitable location.

For the remaining made ground, it may remain beneath permanent hardstandings such as buildings, driveways, pavements & pathways etc.

However, to mitigate the risk to receptors, soft landscaping and general garden areas around the site will need to be remediated by:

EITHER:

- providing 600mm clean/inert imported cover soil over made ground if final finish levels allow;

OR:

- by excavating to virgin CLAY where shallow enough & covering with subsoil/topsoil to suit final finishes.

Imported soil should be clean/inert and free from deleterious materials and should be suitable for use in a residential end use setting.

Imported soil should be able to pass chemical analysis of contaminant suites including: metals, speciated PAH, inorganics & sulphates, SOM, and asbestos screening to current Defra Category 4 Screening Levels (C4SLs) where available, and then to the LQM/CIEH (S4ULs), for use in a residential end use setting.

##### 3.2.2. PL3 – Potable water supply pipes.

If routed from back of pavement direct to properties, then the risk is considered mitigated.

If laid through site made ground, further testing may be required in accordance with UU PSRAS applications for water pipes.

A water pipe application and PSRAS assessment will be undertaken in due course.

#### 3.3. Verification (Phase 4 requirements).

Verification may be required for Planning or Building Control/Building Regulations submission.

Should this be required, it will need to be undertaken by suitably qualified consultants and comprise the following:

- Imported soil source material.
- Characterisation & suitability of material.
- Soil sampling should be undertaken as per YALPAG Guidelines as per the following ratios:
  - Virgin quarried materials, 1-2 samples to confirm inert nature.
  - Crushed hardcore, stone, brick, min 1 sample per 500cum.

- Greenfield/manufactured, generally 1 sample per 250cum (min 3 samples).
- Brownfield, generally 1 sample per 50cum (min 6 samples).
- Samples should be chemically analysed for the following contamination suites: metals, inorganics, PAH USEPA16 speciated, and asbestos screening. Defra Category 4 Screening Levels (C4SLs) > LQM/CIEH (S4ULs) > EIC/AGS/CL:AIRE 2010; for use in a residential end use setting.
- Photographic evidence of soil verification depth.
- Reporting.

### 3.4. Watching Brief.

Only the available part of the site has been investigated at this stage, however, the remaining parts of the site are covered with buildings and are unlikely to offer any different or worse chemical contamination than has been identified already. It would also not change the outcome of the assessment.

However, while this is likely to be the case, it would be prudent during the demolition/construction phase of development, and during any ground works thereafter; to identify any new suspected ground contamination (visual or olfactory) not previously identified, and managed as follows:

- Should any suspected contamination be encountered, the suspect area should be isolated, professional advice sought, and the LPA informed as required.
- Suspected material should undergo testing to identify any contaminants present by suitably qualified personnel in accord with current best practice & guidelines, and risk-assessed to current published data suitable for the proposed end use.
- Should any hazardous contamination be identified, a method for its removal should be produced in line with current best practice & regulations, tailored to the type of contamination present, and agreed with the LPA.
- Should any general low-level contamination be identified, it should be carefully removed & stockpiled separate to on-site soils i.e. on hard-standing or temporary barrier membrane to avoid contamination to the remainder of the site.
- Contaminated material should be disposed of to a suitably licenced landfill site identified by testing certs & contaminants.

Details of any such operations should be included within a final validation/completion report as normal procedure.

### 3.5. Additional Notes.

**Before any further work is undertaken, this report should be submitted to and agreed by the Local Planning Authority Contaminated Land Department/Building Control Department as necessary.**

We trust that the above clear, but should you require further advice please contact the undersigned.

Signed.....



D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...

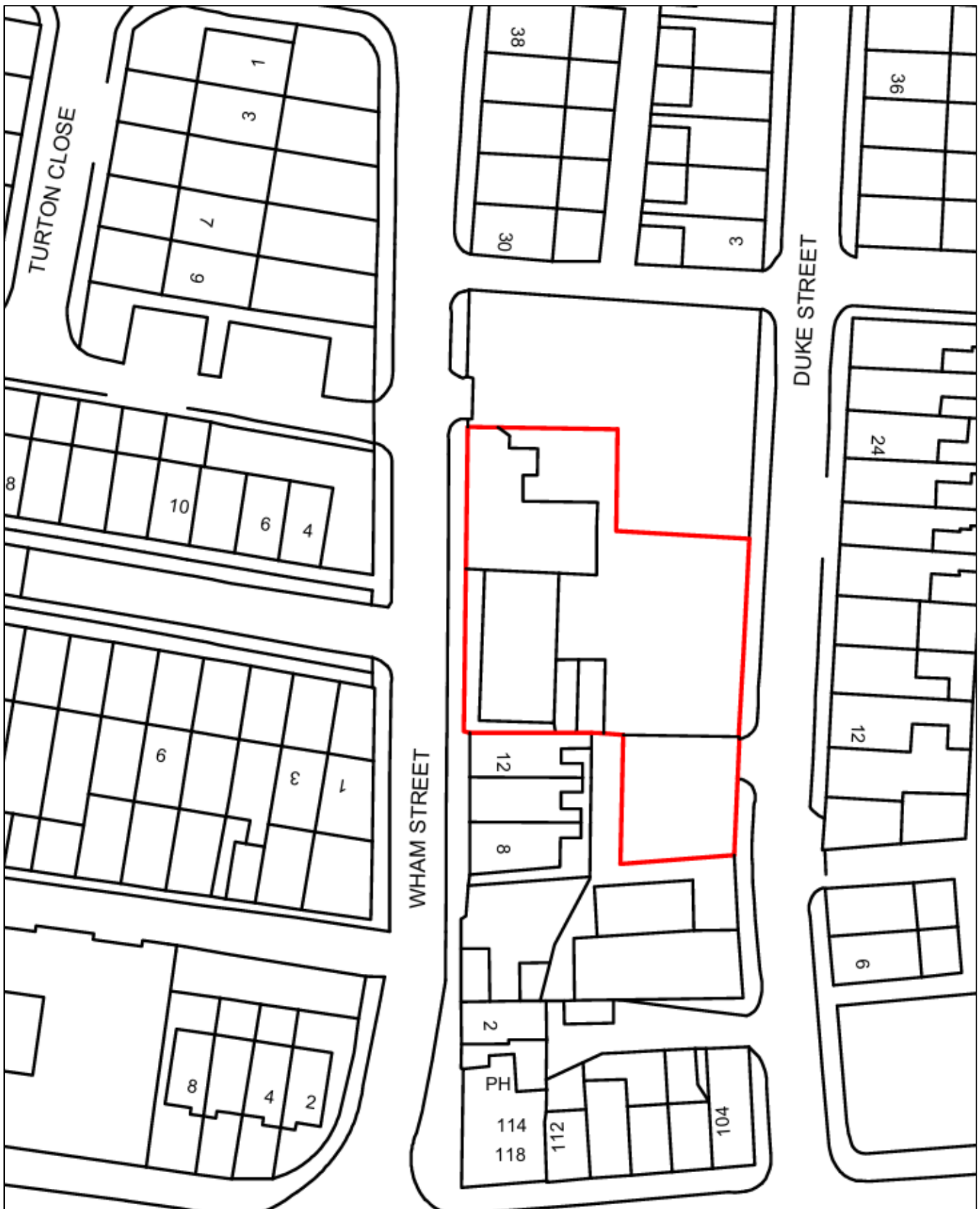


T J Booth BSc (Hons), C. Eng. C. Env. MICE.

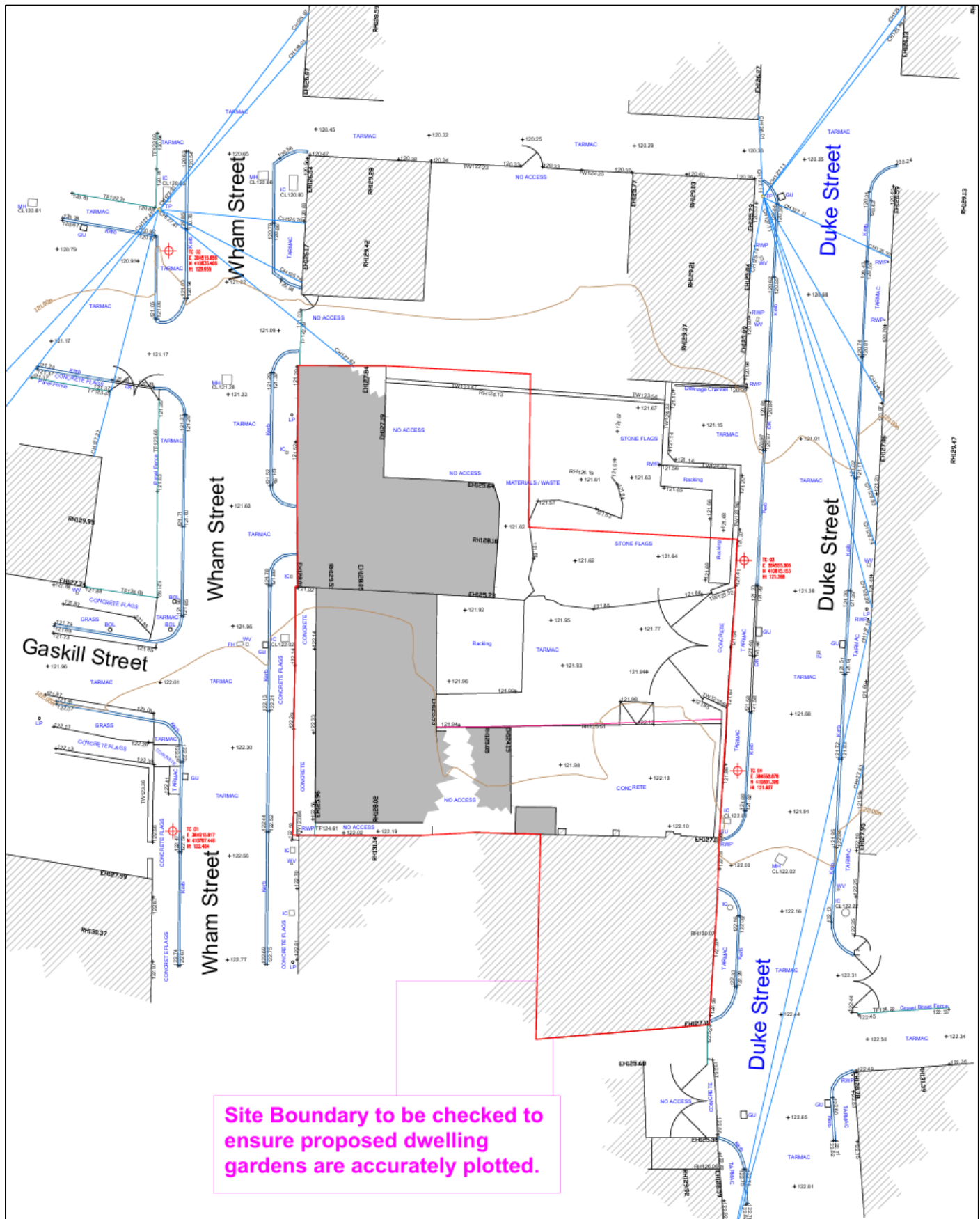
T J Booth Associates.

## 5. APPENDIX A: FIGURES.

### 5.1. Location Plan.



## 5.2. Existing Plan/Topographic Survey.





## 5.4. Site Investigation Logs.

| TRIAL PIT LOG                                                                       |                   |                   |                |                                                                                                                               |
|-------------------------------------------------------------------------------------|-------------------|-------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| Trial pit reference TH1                                                             |                   |                   |                | Sheet 1 of 1                                                                                                                  |
| Water                                                                               | Reduced Level (m) | Legend            | Depth (m)      | Description                                                                                                                   |
|                                                                                     | 121.60            |                   |                |                                                                                                                               |
|                                                                                     |                   | X X<br>X X<br>X X | (0.70)         | Loose dark brown gravelly sand MADE GROUND. Gravel is brick, stone, concrete, slate, mortar. Occasional cobble of brick. (S1) |
|                                                                                     | 120.90            | X X               | 0.70           |                                                                                                                               |
|                                                                                     | 120.60            | - - -<br>- - -    | (0.30)<br>1.00 | Stiff light brown-grey mottled CLAY                                                                                           |
|                                                                                     |                   |                   |                | Trial pit ends                                                                                                                |
| Not shown to scale                                                                  |                   |                   |                |                                                                                                                               |
| Additional notes:                                                                   |                   |                   |                |                                                                                                                               |
|  |                   |                   |                |                                                                                                                               |

## TRIAL PIT LOG

Trial pit reference TH2

Sheet 1 of 1

| Water | Reduced Level (m) | Legend         | Depth (m)      | Description                                                                                                                   |
|-------|-------------------|----------------|----------------|-------------------------------------------------------------------------------------------------------------------------------|
|       | 121.60            |                |                |                                                                                                                               |
|       | 121.25            | X X<br>X X     | (0.35)<br>0.35 | Loose dark brown gravelly sand MADE GROUND. Gravel is brick, stone, concrete, slate, mortar. Occasional cobble of brick. (S2) |
|       | 121.10            | - - -          | 0.50           | Soft dark grey CLAY                                                                                                           |
|       | 120.50            | - - -<br>- - - | (0.60)<br>1.10 | Soft to firm light brown-grey mottled CLAY                                                                                    |
|       | 120.40            | - - -          | 1.20           | Stiff light brown-grey mottled CLAY                                                                                           |
|       |                   |                |                | Trial pit ends                                                                                                                |

Not shown to scale

Additional notes:



## TRIAL PIT LOG

Trial pit reference TP3

Sheet 1 of 1

| Water | Reduced Level (m) | Legend             | Depth (m)      | Description                                                                              |
|-------|-------------------|--------------------|----------------|------------------------------------------------------------------------------------------|
|       | 121.90            |                    |                |                                                                                          |
|       | 121.50            | X o X o<br>o X o X | (0.40)<br>0.40 | Loose dark grey-black gravelly MADE GROUND. Gravel is ash. Hydrocarbon odour noted. (S3) |
|       | 121.10            | - - -<br>- - -     | (0.40)<br>0.80 | Soft to firm light brown-grey mottled CLAY                                               |
|       | 121.00            | - - -              | 0.90           | Stiff light brown-grey mottled CLAY                                                      |
|       |                   |                    |                | Trial pit ends                                                                           |

Not shown to scale

Additional notes:



## 5.5. TJBA Soil Analysis.

| CLIENT/SITE:                     |                                | B & L - Former Star Works, Wham Street, Heywood. |       |         |         |                                               |                |                              |
|----------------------------------|--------------------------------|--------------------------------------------------|-------|---------|---------|-----------------------------------------------|----------------|------------------------------|
| SAMPLE TYPE:                     |                                | SOILS                                            |       |         |         |                                               |                |                              |
| SAMPLING DATE:                   |                                | 18.06.2026                                       |       |         |         |                                               |                |                              |
| Contaminant                      |                                | No                                               | Max   | Mean    | t 95    | RESIDENTIAL<br>(with or without plant uptake) |                |                              |
|                                  |                                |                                                  |       |         |         | Pass/Fail                                     | Comment        |                              |
| METAL                            | Arsenic                        | 3                                                | 71    | 49.3333 | 69.6    | 37                                            | FURTHER ACTION | S1 & S3                      |
| METAL                            | Boron                          | 3                                                | 1     | 1       | 1       | 290                                           | PASS           |                              |
| METAL                            | Cadmium                        | 3                                                | 8.5   | 4.23333 | 7.91    | 22                                            | PASS           |                              |
| METAL                            | Chromium as Cr(III)            | 3                                                | 55    | 40.00   | 52.80   | 910                                           | PASS           |                              |
| METAL                            | Chromium as Cr(VI)             | 3                                                | 1     | 1       | 1       | 21                                            | PASS           |                              |
| METAL                            | Copper                         | 3                                                | 374   | 193     | 348.5   | 2400                                          | PASS           |                              |
| METAL                            | Lead                           | 3                                                | 368   | 293.667 | 358     | 200                                           | FURTHER ACTION | S1, S2, S3                   |
| METAL                            | Mercury (inorganic)            | 3                                                | 0.17  | 0.17    | 0.17    | 40                                            | PASS           |                              |
| METAL                            | Nickel                         | 3                                                | 63    | 58      | 62.5    | 130                                           | PASS           |                              |
| METAL                            | Selenium                       | 3                                                | 1     | 1       | 1       | 250                                           | PASS           |                              |
| METAL                            | Zinc as Zn                     | 3                                                | 752   | 433     | 709.4   | 3700                                          | PASS           |                              |
| INORGANIC                        | Cyanide (Total)                | 3                                                | 1     | 1       | 1       | 34                                            | PASS           |                              |
| INORGANIC                        | Sulphate (Total) as SO4        | 3                                                | 0.24  | 0.15767 | 0.234   | 0.24                                          | comment        | S1 DS2 only site ave/t95 DS1 |
| INORGANIC                        | Sulphide                       | 3                                                | 5     | 5       | 5       | 250                                           | PASS           |                              |
| INORGANIC                        | pH                             | 3                                                | 8.41  | 8.12667 | 8.408   | 6 to 8                                        | ALKALINE       |                              |
| INORGANIC                        | Sulphur (Elemental)            | 3                                                | 300   | 103.333 | 270.5   | 100                                           | comment        | max is S3 only, site ave/t95 |
| INORGANIC                        | Asbestos Identification        | 3                                                | 1     | 0.33333 | 0.9     | 0                                             | FURTHER ACTION | S1 only                      |
| INORGANIC                        | Asbestos quantification        | 3                                                | 0.048 | 0.016   | 0.0432  | 0.001                                         | FURTHER ACTION | chrysotile loose fibres      |
| ORGANIC                          | SOM                            | 3                                                | 6     | 4.83333 | 6       |                                               |                |                              |
| PAH                              | acenaphthene                   | 3                                                | 11.1  | 3.72667 | 9.996   | 1100                                          | PASS           |                              |
| PAH                              | acenaphthylene                 | 3                                                | 1.55  | 0.52333 | 1.396   | 920                                           | PASS           |                              |
| PAH                              | anthracene                     | 3                                                | 7.5   | 2.55333 | 6.76    | 11000                                         | PASS           |                              |
| PAH                              | benzo[a]anthracene             | 3                                                | 0.76  | 0.63    | 0.749   | 13                                            | PASS           |                              |
| PAH                              | benzo[a]pyrene (BaP)           | 3                                                | 0.68  | 0.55    | 0.664   | 5                                             | PASS           |                              |
| PAH                              | benzo[b]fluoranthene           | 3                                                | 0.77  | 0.64333 | 0.755   | 3.7                                           | PASS           |                              |
| PAH                              | benzo[g,h,i]perylene           | 3                                                | 0.39  | 0.36    | 0.386   | 350                                           | PASS           |                              |
| PAH                              | benzo[k]fluoranthene           | 3                                                | 0.28  | 0.22667 | 0.274   | 100                                           | PASS           |                              |
| PAH                              | chrysene                       | 3                                                | 0.8   | 0.71    | 0.792   | 27                                            | PASS           |                              |
| PAH                              | dibenz[ah]anthracene           | 3                                                | 0.1   | 0.08667 | 0.099   | 0.3                                           | PASS           |                              |
| PAH                              | fluoranthene                   | 3                                                | 1.99  | 1.29333 | 1.886   | 890                                           | PASS           |                              |
| PAH                              | fluorene                       | 3                                                | 13.7  | 4.58333 | 12.334  | 860                                           | PASS           |                              |
| PAH                              | indeno[123-cd]pyrene           | 3                                                | 0.46  | 0.40333 | 0.454   | 41                                            | PASS           |                              |
| PAH                              | naphthalene                    | 3                                                | 13.3  | 4.45667 | 11.974  | 13                                            | comment        | max is S3 only, site ave/t95 |
| PAH                              | phenanthrene                   | 3                                                | 9.43  | 3.4     | 8.536   | 440                                           | PASS           |                              |
| PAH                              | pyrene                         | 3                                                | 1.99  | 1.29333 | 1.887   | 2000                                          | PASS           |                              |
| FUEL                             | aliphatic EC 5-6               | 2                                                | 0.01  | 0.01    | 0.01    | 160                                           | PASS           |                              |
| FUEL                             | aliphatic EC 6-8               | 2                                                | 0.07  | 0.04    | 0.067   | 530                                           | PASS           |                              |
| FUEL                             | aliphatic EC 8-10              | 2                                                | 27    | 14      | 25.7    | 150                                           | PASS           |                              |
| FUEL                             | aliphatic EC 10-12             | 2                                                | 274   | 137.5   | 260.35  | 760                                           | PASS           |                              |
| FUEL                             | aliphatic EC 12-16             | 2                                                | 831   | 416     | 789.5   | 4300                                          | PASS           |                              |
| FUEL                             | aliphatic EC 16-35             | 2                                                | 607   | 316     | 577.9   | 110000                                        | PASS           |                              |
| FUEL                             | aromatic EC 5-7,Benzene        | 2                                                | 0.01  | 0.01    | 0.01    | 300                                           | PASS           |                              |
| FUEL                             | aromatic EC 7-8,Toluene        | 2                                                | 0.01  | 0.01    | 0.01    | 660                                           | PASS           |                              |
| FUEL                             | aromatic EC 8-10               | 2                                                | 84    | 43      | 79.9    | 190                                           | PASS           |                              |
| FUEL                             | aromatic EC 10-12              | 2                                                | 563   | 282     | 534.9   | 380                                           | FURTHER ACTION | max is S3 only               |
| FUEL                             | aromatic EC 12-16              | 2                                                | 2670  | 1337    | 2536.7  | 660                                           | FURTHER ACTION | max is S3 only               |
| FUEL                             | aromatic EC 16-21              | 2                                                | 1270  | 639     | 1206.9  | 930                                           | FURTHER ACTION | max is S3 only               |
| FUEL                             | aromatic EC 21-35              | 2                                                | 173   | 101.5   | 165.85  | 1700                                          | PASS           |                              |
| BTEX (VOC)                       | benzene (EC 6.5)               | 2                                                | 0.01  | 0.01    | 0.01    | 0.87                                          | PASS           |                              |
| BTEX (VOC)                       | toluene (EC 7.58)              | 2                                                | 0.01  | 0.01    | 0.01    | 660                                           | PASS           |                              |
| BTEX (VOC)                       | ethylbenzene (EC 8.5)          | 2                                                | 0.02  | 0.015   | 0.0195  | 260                                           | PASS           |                              |
| BTEX (VOC)                       | m-xylene (EC ~8.6)             | 2                                                | 0.08  | 0.045   | 0.0765  | 320                                           | PASS           |                              |
| BTEX (VOC)                       | p-xylene (EC ~8.6)             | 2                                                | 0.08  | 0.045   | 0.0765  | 310                                           | PASS           |                              |
| BTEX (VOC)                       | o-xylene (EC ~8.6)             | 2                                                | 0.09  | 0.05    | 0.086   | 330                                           | PASS           |                              |
| BTEX (VOC)                       | MTBE (methyl tert-butyl ether) | 2                                                | 0.01  | 0.01    | 0.01    | 160                                           | PASS           |                              |
| PHENOLS AND CHLOROPHENOLS (SVOC) | Phenol                         | 3                                                | 0.2   | 0.2     | 0.2     | 380                                           | PASS           |                              |
| PSRAS chemicals                  | total BTEX & MTBE              | 2                                                | 0.3   | 0.185   | 0.2885  | 0.1                                           | FURTHER ACTION |                              |
| PSRAS chemicals                  | EC5-EC10 ali & aro hydrocarb   | 2                                                | 111.1 | 57.07   | 105.697 | 2                                             | FURTHER ACTION |                              |
| PSRAS chemicals                  | EC10-EC16 ali & aro hydrocarb  | 2                                                | 4338  | 2172.5  | 4121.45 | 10                                            | FURTHER ACTION |                              |
| PSRAS chemicals                  | EC16-EC40 ali & aro hydrocarb  | 2                                                | 2050  | 1056.5  | 1950.65 | 500                                           | FURTHER ACTION |                              |

## Comments Key

Asbestos: A=amosite (brown), CH=chrysotile (white), CR=crocidolite (blue)

## 5.6. Envirolab Ltd Certificates.



Hattersley Science & Technology Park  
Stockport Road, Hattersley, SK14 3QU

**FINAL ANALYTICAL TEST REPORT**

**Envirolab Job Number:** 26/07742  
**Issue Number:** 1

**Date:** 10 July, 2026

**Client:** T J Booth Associates  
20a East Gate Street  
Rochdale  
Rochdale  
Greater Manchester  
UK  
OL16 1DH

**Project Manager:** Daniel Slattery  
**Project Name:** B&L - Starworks, Wham Street, Heywood, Rochdale  
**Project Ref:** N/A  
**Order No:** N/A  
**Date Samples Received:** 22/06/26  
**Date Instructions Received:** 22/06/26  
**Date Analysis Completed:** 10/07/26

**Approved by:**

Richard Wong  
Client Manager





Envirolab Job Number: 26/07742

Client Project Name: B&L - Starworks, Wham Street,  
Heywood, Rochdale

Client Project Ref: N/A

| Lab Sample ID                                      | 26/07742/1 | 26/07742/2 | 26/07742/3 |  |  |  |  | Units | Limit of Detection | Method ref   |
|----------------------------------------------------|------------|------------|------------|--|--|--|--|-------|--------------------|--------------|
| Client Sample No                                   | S1         | S2         | S3         |  |  |  |  |       |                    |              |
| Client Sample ID                                   | TH1        | TH2        | TH3        |  |  |  |  |       |                    |              |
| Depth to Top                                       | 0.00       | 0.00       | 0.00       |  |  |  |  |       |                    |              |
| Depth To Bottom                                    | 0.60       | 0.35       | 0.40       |  |  |  |  |       |                    |              |
| Date Sampled                                       | 18-Jun-26  | 18-Jun-26  | 18-Jun-26  |  |  |  |  |       |                    |              |
| Sample Type                                        | SOIL       | SOIL       | SOIL       |  |  |  |  |       |                    |              |
| Sample Matrix Code                                 | 4AE        | 4AE        | 4AE        |  |  |  |  |       |                    |              |
| % Stones >10mm <sub>A</sub>                        | <0.1       | <0.1       | <0.1       |  |  |  |  | % w/w | 0.1                | A-T-044      |
| pH <sub>0</sub> <sup>MS</sup>                      | 8.41       | 8.39       | 7.58       |  |  |  |  | pH    | 0.01               | A-T-031s     |
| Sulphate (acid soluble) <sub>0</sub> <sup>MS</sup> | 2400       | 530        | 1800       |  |  |  |  | mg/kg | 200                | A-T-028s     |
| Cyanide (total) <sub>A</sub> <sup>MS</sup>         | <1         | <1         | <1         |  |  |  |  | mg/kg | 1                  | A-T-042s/TCN |
| Phenols - Total by HPLC <sub>A</sub>               | <0.2       | <0.2       | <0.2       |  |  |  |  | mg/kg | 0.2                | A-T-050s     |
| Sulphide <sub>A</sub>                              | <5         | <5         | <5         |  |  |  |  | mg/kg | 5                  | A-T-045-s    |
| Sulphur (elemental) <sub>0</sub> <sup>MS</sup>     | <5         | <5         | 300        |  |  |  |  | mg/kg | 5                  | A-T-029s     |
| Organic Matter <sub>0</sub> <sup>MS</sup>          | 4.23       | 4.81       | 17.6       |  |  |  |  | % w/w | 0.14               | A-T-032s     |
| Arsenic <sub>0</sub> <sup>MS</sup>                 | 57         | 20         | 71         |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Boron (water soluble) <sub>0</sub> <sup>MS</sup>   | <1.0       | <1.0       | <1.0       |  |  |  |  | mg/kg | 1                  | A-T-027s     |
| Cadmium <sub>0</sub> <sup>MS</sup>                 | 2.6        | 8.5        | 1.6        |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Copper <sub>0</sub> <sup>MS</sup>                  | 374        | 119        | 86         |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Chromium <sub>0</sub> <sup>MS</sup>                | 32         | 55         | 33         |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Chromium (hexavalent) <sub>0</sub>                 | <1         | <1         | <1         |  |  |  |  | mg/kg | 1                  | A-T-040s     |
| Lead <sub>0</sub> <sup>MS</sup>                    | 368        | 245        | 268        |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Mercury <sub>0</sub>                               | <0.17      | <0.17      | <0.17      |  |  |  |  | mg/kg | 0.17               | A-T-024s     |
| Nickel <sub>0</sub> <sup>MS</sup>                  | 58         | 63         | 53         |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Selenium <sub>0</sub> <sup>MS</sup>                | 1          | <1         | <1         |  |  |  |  | mg/kg | 1                  | A-T-024s     |
| Zinc <sub>0</sub> <sup>MS</sup>                    | 752        | 326        | 221        |  |  |  |  | mg/kg | 1                  | A-T-024s     |



Envirolab Job Number: 26/07742

Client Project Name: B&L - Starworks, Wham Street,  
Heywood, Rochdale

Client Project Ref: N/A

| Lab Sample ID                                                              | 26/07742/1          | 26/07742/2 | 26/07742/3 |  |  |  |  | Units | Limit of Detection | Method ref |
|----------------------------------------------------------------------------|---------------------|------------|------------|--|--|--|--|-------|--------------------|------------|
| Client Sample No                                                           | S1                  | S2         | S3         |  |  |  |  |       |                    |            |
| Client Sample ID                                                           | TH1                 | TH2        | TH3        |  |  |  |  |       |                    |            |
| Depth to Top                                                               | 0.00                | 0.00       | 0.00       |  |  |  |  |       |                    |            |
| Depth To Bottom                                                            | 0.60                | 0.35       | 0.40       |  |  |  |  |       |                    |            |
| Date Sampled                                                               | 18-Jun-26           | 18-Jun-26  | 18-Jun-26  |  |  |  |  |       |                    |            |
| Sample Type                                                                | SOIL                | SOIL       | SOIL       |  |  |  |  |       |                    |            |
| Sample Matrix Code                                                         | 4AE                 | 4AE        | 4AE        |  |  |  |  |       |                    |            |
| Asbestos in Soil (inc. matrix)                                             |                     |            |            |  |  |  |  |       |                    |            |
| Asbestos in soil <sup>o</sup>                                              | Chrysotile          | NAD        | NAD        |  |  |  |  |       |                    | A-T-045    |
| Asbestos Matrix (visual) <sup>o</sup>                                      | -                   | -          | -          |  |  |  |  |       |                    | A-T-045    |
| Asbestos Matrix (microscope) <sup>o</sup>                                  | Loose<br>Insulation | -          | -          |  |  |  |  |       |                    | A-T-045    |
| Asbestos ACM - Suitable for Water<br>Absorption Test? <sup>o</sup>         | N/A                 | N/A        | N/A        |  |  |  |  |       |                    | A-T-045    |
|                                                                            |                     |            |            |  |  |  |  |       |                    |            |
| Asbestos in Soil Quantification %<br>(Hand Picking & Weighing)             |                     |            |            |  |  |  |  |       |                    |            |
| Asbestos in soil % composition (hand<br>picking and weighing) <sup>o</sup> | 0.048               | -          | -          |  |  |  |  | % w/w | 0.001              | A-T-054    |



Envirolab Job Number: 26/07742

Client Project Name: B&L - Starworks, Wham Street,  
Heywood, Rochdale

Client Project Ref: N/A

| Lab Sample ID                                    | 26/07742/1         | 26/07742/2        | 26/07742/3        |  |  |  |  | Units | Limit of Detection | Method ref |
|--------------------------------------------------|--------------------|-------------------|-------------------|--|--|--|--|-------|--------------------|------------|
| Client Sample No                                 | S1                 | S2                | S3                |  |  |  |  |       |                    |            |
| Client Sample ID                                 | TH1                | TH2               | TH3               |  |  |  |  |       |                    |            |
| Depth to Top                                     | 0.00               | 0.00              | 0.00              |  |  |  |  |       |                    |            |
| Depth To Bottom                                  | 0.60               | 0.35              | 0.40              |  |  |  |  |       |                    |            |
| Date Sampled                                     | 18-Jun-26          | 18-Jun-26         | 18-Jun-26         |  |  |  |  |       |                    |            |
| Sample Type                                      | SOIL               | SOIL              | SOIL              |  |  |  |  |       |                    |            |
| Sample Matrix Code                               | 4AE                | 4AE               | 4AE               |  |  |  |  |       |                    |            |
| PAH-16MS                                         |                    |                   |                   |  |  |  |  |       |                    |            |
| Acenaphthene <sub>A</sub> <sup>MS</sup>          | 0.06               | 0.02              | 11.1              |  |  |  |  | mg/kg | 0.01               | A-T-019a   |
| Acenaphthylene <sub>A</sub> <sup>MS</sup>        | <0.01              | <0.01             | 1.55              |  |  |  |  | mg/kg | 0.01               | A-T-019a   |
| Anthracene <sub>A</sub> <sup>MS</sup>            | 0.10               | 0.06              | 7.50              |  |  |  |  | mg/kg | 0.02               | A-T-019a   |
| Benzo(a)anthracene <sub>A</sub> <sup>MS</sup>    | 0.48               | 0.65              | 0.76              |  |  |  |  | mg/kg | 0.04               | A-T-019a   |
| Benzo(a)pyrene <sub>A</sub> <sup>MS</sup>        | 0.45               | 0.68              | 0.52              |  |  |  |  | mg/kg | 0.04               | A-T-019a   |
| Benzo(b)fluoranthene <sub>A</sub> <sup>MS</sup>  | 0.54               | 0.77              | 0.62              |  |  |  |  | mg/kg | 0.05               | A-T-019a   |
| Benzo(ghi)perylene <sub>A</sub> <sup>MS</sup>    | 0.35               | 0.39              | 0.34              |  |  |  |  | mg/kg | 0.05               | A-T-019a   |
| Benzo(k)fluoranthene <sub>A</sub> <sup>MS</sup>  | 0.18               | 0.28              | 0.22              |  |  |  |  | mg/kg | 0.07               | A-T-019a   |
| Chrysene <sub>A</sub> <sup>MS</sup>              | 0.61               | 0.80              | 0.72              |  |  |  |  | mg/kg | 0.06               | A-T-019a   |
| Dibenzo(ah)anthracene <sub>A</sub> <sup>MS</sup> | 0.07               | 0.09              | 0.10              |  |  |  |  | mg/kg | 0.04               | A-T-019a   |
| Fluoranthene <sub>A</sub> <sup>MS</sup>          | 0.95               | 0.94              | 1.99              |  |  |  |  | mg/kg | 0.08               | A-T-019a   |
| Fluorene <sub>A</sub> <sup>MS</sup>              | 0.04               | 0.01              | 13.7              |  |  |  |  | mg/kg | 0.01               | A-T-019a   |
| Indeno(123-cd)pyrene <sub>A</sub> <sup>MS</sup>  | 0.35               | 0.46              | 0.40              |  |  |  |  | mg/kg | 0.03               | A-T-019a   |
| Naphthalene <sub>A</sub> <sup>MS</sup>           | <0.03 <sup>U</sup> | 0.04 <sup>U</sup> | 13.3 <sup>U</sup> |  |  |  |  | mg/kg | 0.03               | A-T-019a   |
| Phenanthrene <sub>A</sub> <sup>MS</sup>          | 0.49               | 0.28              | 9.43              |  |  |  |  | mg/kg | 0.03               | A-T-019a   |
| Pyrene <sub>A</sub> <sup>MS</sup>                | 0.93               | 0.96              | 1.99              |  |  |  |  | mg/kg | 0.07               | A-T-019a   |
| Total PAH-16MS <sub>A</sub> <sup>MS</sup>        | 5.60               | 6.43              | 64.2              |  |  |  |  | mg/kg | 0.01               | A-T-019a   |



Envirolab Job Number: 26/07742

Client Project Name: B&L - Starworks, Wham Street,  
Heywood, Rochdale

Client Project Ref: N/A

| Lab Sample ID                                  | 26/07742/1 | 26/07742/2 | 26/07742/3 |  |  |  |  | Units | Limit of Detection | Method ref   |
|------------------------------------------------|------------|------------|------------|--|--|--|--|-------|--------------------|--------------|
| Client Sample No                               | S1         | S2         | S3         |  |  |  |  |       |                    |              |
| Client Sample ID                               | TH1        | TH2        | TH3        |  |  |  |  |       |                    |              |
| Depth to Top                                   | 0.00       | 0.00       | 0.00       |  |  |  |  |       |                    |              |
| Depth To Bottom                                | 0.60       | 0.35       | 0.40       |  |  |  |  |       |                    |              |
| Date Sampled                                   | 18-Jun-26  | 18-Jun-26  | 18-Jun-26  |  |  |  |  |       |                    |              |
| Sample Type                                    | SOIL       | SOIL       | SOIL       |  |  |  |  |       |                    |              |
| Sample Matrix Code                             | 4AE        | 4AE        | 4AE        |  |  |  |  |       |                    |              |
| TPH CWG with Clean Up                          |            |            |            |  |  |  |  |       |                    |              |
| Ali >C5-C6 <sub>A</sub>                        | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| Ali >C6-C8 <sub>A</sub>                        | -          | <0.01      | 0.07       |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| Ali >C8-C10 <sub>A</sub>                       | -          | <1         | 27         |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Ali >C10-C12 <sub>A</sub> <sup>M#</sup>        | -          | <1         | 274        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Ali >C12-C16 <sub>A</sub> <sup>M#</sup>        | -          | 1          | 831        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Ali >C16-C21 <sub>A</sub> <sup>M#</sup>        | -          | 3          | 473        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Ali >C21-C35 <sub>A</sub> <sup>M#</sup>        | -          | 22         | 134        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Total Aliphatics <sub>A</sub>                  | -          | 27         | 1740       |  |  |  |  | mg/kg | 1                  | Calc-Aa Recd |
| Aro >C5-C7 <sub>A</sub> <sup>#</sup>           | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| Aro >C7-C8 <sub>A</sub> <sup>#</sup>           | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| Aro >C8-C10 <sub>A</sub>                       | -          | 2          | 84         |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Aro >C10-C12 <sub>A</sub>                      | -          | 1          | 563        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Aro >C12-C16 <sub>A</sub>                      | -          | 4          | 2670       |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Aro >C16-C21 <sub>A</sub> <sup>M#</sup>        | -          | 8          | 1270       |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Aro >C21-C35 <sub>A</sub> <sup>M#</sup>        | -          | 30         | 173        |  |  |  |  | mg/kg | 1                  | A-T-055s     |
| Total Aromatics <sub>A</sub>                   | -          | 46         | 4770       |  |  |  |  | mg/kg | 1                  | Calc-Aa Recd |
| TPH (Ali & Aro >C5-C35) <sub>A</sub>           | -          | 73         | 6500       |  |  |  |  | mg/kg | 1                  | Calc-Aa Recd |
| BTEX - Benzene <sub>A</sub> <sup>#</sup>       | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| BTEX - Toluene <sub>A</sub> <sup>#</sup>       | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup> | -          | <0.01      | 0.02       |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>  | -          | <0.01      | 0.08       |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| BTEX - o Xylene <sub>A</sub> <sup>#</sup>      | -          | <0.01      | 0.09       |  |  |  |  | mg/kg | 0.01               | A-T-022s     |
| MTBE <sub>A</sub> <sup>#</sup>                 | -          | <0.01      | <0.01      |  |  |  |  | mg/kg | 0.01               | A-T-022s     |



## Report Notes

### General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

### Key

|                           |                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------|
| Superscript "#"           | Accredited to ISO 17025                                                                               |
| Superscript "M"           | Accredited to MCertS                                                                                  |
| Superscript "U"           | Individual result not accredited                                                                      |
| None of the above symbols | Analysis unaccredited                                                                                 |
| Subscript "A"             | Analysis performed on as-received Sample                                                              |
| Subscript "D"             | Analysis performed on the dried sample, crushed to pass 2mm sieve.                                    |
| Subscript "D" on Asbestos | Analysis performed on a dried aliquot of sample provided.                                             |
| Subscript "A"             | Analysis has dependant options against results. Details appear in the comments of your Sample receipt |
| Subscript "@"             | Result is an opinion                                                                                  |
| IS                        | Insufficient Sample for analysis                                                                      |
| US                        | Unsuitable Sample for analysis                                                                        |
| NDP                       | No Determination Possible                                                                             |
| NAD                       | No Asbestos Detected                                                                                  |
| Trace                     | Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.          |
| N/A                       | Not applicable                                                                                        |

### Asbestos

**Identification:** Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

### Assigned Matrix Codes

|   |           |   |                                             |   |                               |
|---|-----------|---|---------------------------------------------|---|-------------------------------|
| 1 | SAND      | 6 | CLAY/LOAM                                   | A | Contains Stones               |
| 2 | LOAM      | 7 | OTHER                                       | B | Contains Construction Rubble  |
| 3 | CLAY      | 8 | Asbestos Bulk (Only Asbestos ID accredited) | C | Contains visible hydrocarbons |
| 4 | LOAM/SAND | 9 | Incinerator Ash (some Metals accredited)    | D | Contains glass / metal        |
| 5 | SAND/CLAY |   |                                             | E | Contains roots / twigs        |

**Note:** 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

### Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as "% stones >10mm".

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results "with Clean up" indicates samples cleaned up with Silica during extraction.

### EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

### Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.



### Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU  
Tel. 0161 368 4921 email. ask@envirolab.co.uk

**Client:** T J Booth Associates, 20a East Gate Street, Rochdale, Rochdale, Greater Manchester, UK, OL16 1DH

**Project No:** 26/07742

**Project:** B&L - Starworks, Wham Street, Heywood, Rochdale  
**Clients Project No:** N/A

**Date Received:** 22/06/2026 (am)

**Cool Box Temperatures (°C):** 21.4

| Lab Sample ID          | 26/07742/1        | 26/07742/2        | 26/07742/3        |
|------------------------|-------------------|-------------------|-------------------|
| Client Sample No       | S1                | S2                | S3                |
| Client Sample ID/Depth | TH1<br>0.00-0.60m | TH2<br>0.00-0.35m | TH3<br>0.00-0.40m |
| Date Sampled           | 18/06/26          | 18/06/26          | 18/06/26          |
| Deviation Code         |                   |                   |                   |
| F                      | ✓                 | ✓                 | ✓                 |

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

#### HOLDING TIME EXCEEDANCES

| Lab Sample ID          | 26/07742/1        | 26/07742/2        | 26/07742/3        |
|------------------------|-------------------|-------------------|-------------------|
| Client Sample No       | S1                | S2                | S3                |
| Client Sample ID/Depth | TH1<br>0.00-0.60m | TH2<br>0.00-0.35m | TH3<br>0.00-0.40m |
| Date Sampled           | 18/06/26          | 18/06/26          | 18/06/26          |
| Cyanide (total)        | ✓                 | ✓                 | ✓                 |
| VPHCWG                 | ✓                 | ✓                 | ✓                 |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

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### Envirolab Analysis Dates

| Lab Sample ID          | 26/07742/1        | 26/07742/2        | 26/07742/3        |
|------------------------|-------------------|-------------------|-------------------|
| Client Sample No       | S1                | S2                | S3                |
| Client Sample ID/Depth | TH1<br>0.00-0.60m | TH2<br>0.00-0.35m | TH3<br>0.00-0.40m |
| Date Sampled           | 18/06/26          | 18/06/26          | 18/06/26          |
| A-T-019s               | 29/06/2026        | 29/06/2026        | 29/06/2026        |
| A-T-022s               |                   | 08/07/2026        | 08/07/2026        |
| A-T-024s               | 10/07/2026        | 10/07/2026        | 10/07/2026        |
| A-T-027s               | 03/07/2026        | 03/07/2026        | 03/07/2026        |
| A-T-028s               | 03/07/2026        | 03/07/2026        | 03/07/2026        |
| A-T-029s               | 03/07/2026        | 03/07/2026        | 03/07/2026        |
| A-T-031s               | 02/07/2026        | 02/07/2026        | 02/07/2026        |
| A-T-032s               | 03/07/2026        | 10/07/2026        | 10/07/2026        |
| A-T-040s               | 06/07/2026        | 06/07/2026        | 06/07/2026        |
| A-T-042sTCN            | 06/07/2026        | 06/07/2026        | 06/07/2026        |
| A-T-043-s              | 06/07/2026        | 06/07/2026        | 06/07/2026        |
| A-T-044                | 29/06/2026        | 29/06/2026        | 29/06/2026        |
| A-T-045                | 24/06/2026        | 24/06/2026        | 24/06/2026        |
| A-T-050s               | 09/07/2026        | 09/07/2026        | 09/07/2026        |
| A-T-054                | 01/07/2026        |                   |                   |
| A-T-055s               |                   | 08/07/2026        | 08/07/2026        |
| Calc-As Recd           |                   | 08/07/2026        | 08/07/2026        |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

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## 6. APPENDIX B: SITE WALKOVER PHOTOS.













## 7. APPENDIX C: GROUNDSURE GEOINSIGHT.



PEOPLES GYM, WHAM STREET, HEYWOOD, ROCHDALE, OL10 4QU

## Order Details

**Date:** 17/07/2026

**Your ref:** B&L-star works-groundsurre geoinstight-170726

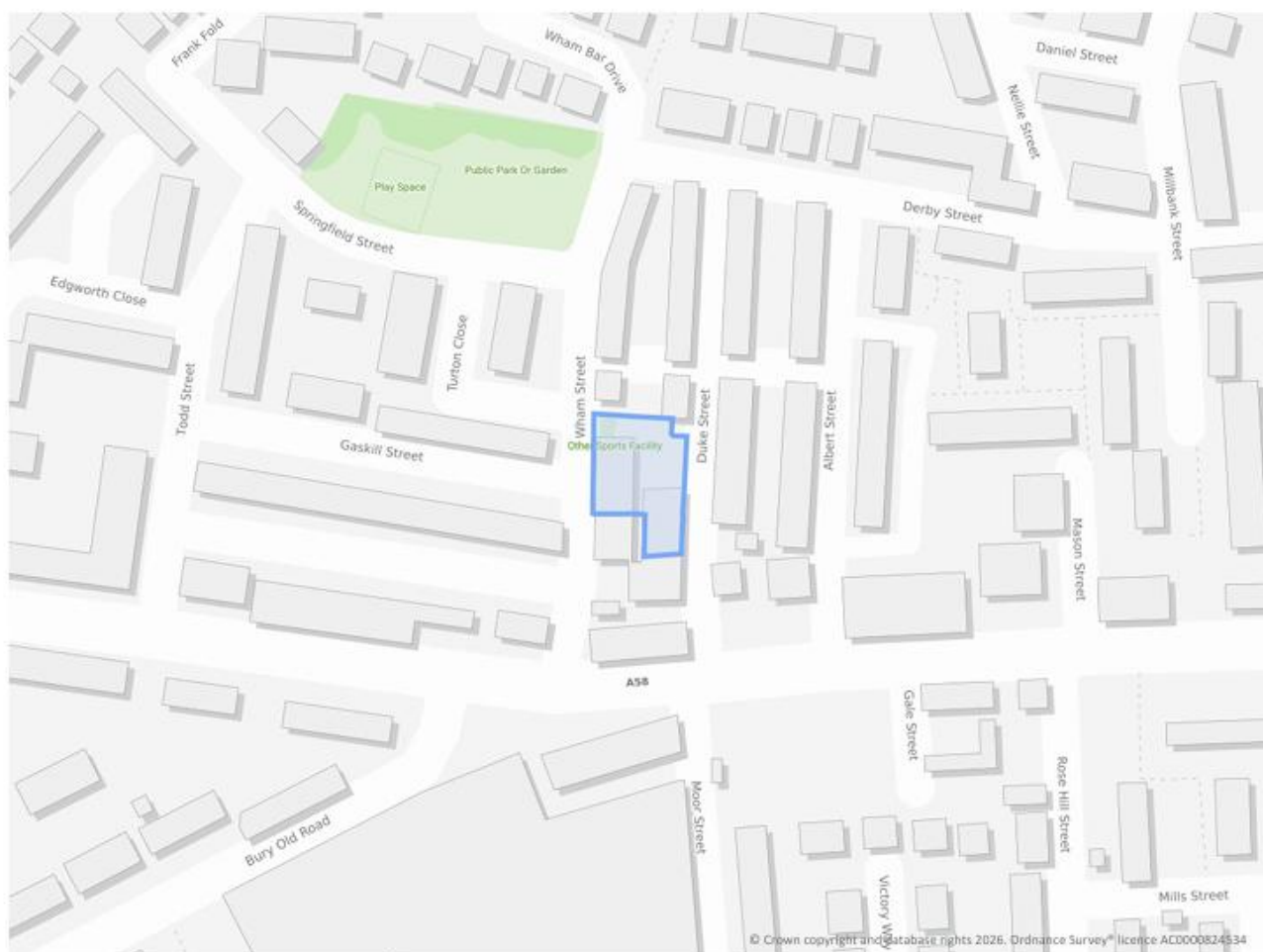
**Our Ref:** GS-ZHP-LMD-PF6-ZF8

## Site Details

**Location:** 384538 410808

**Area:** 0.1 ha

**Authority:** [Rochdale Metropolitan Borough Council](#)  
↗



Summary of findings

[p. 2 >](#) Aerial image[p. 5 >](#)

OS MasterMap site plan

[p.10 >](#) [Insight User Guide](#) ↗



PEOPLES GYM, WHAM STREET,  
HEYWOOD, ROCHDALE, OL10 4QU

Ref: GS-ZHP-LMD-PF6-ZF8  
Your ref: B&L-star works-groundsure  
geoinsight-170726  
Grid ref: 384538 410808

## Geology 1:10,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Reclaimed ground
  - Made ground
  - Worked ground
  - Infilled ground
  - Disturbed ground
  - Landscaped ground

### 1.2 Artificial and made ground (10k)

Records within 500m

6

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 12 >](#)

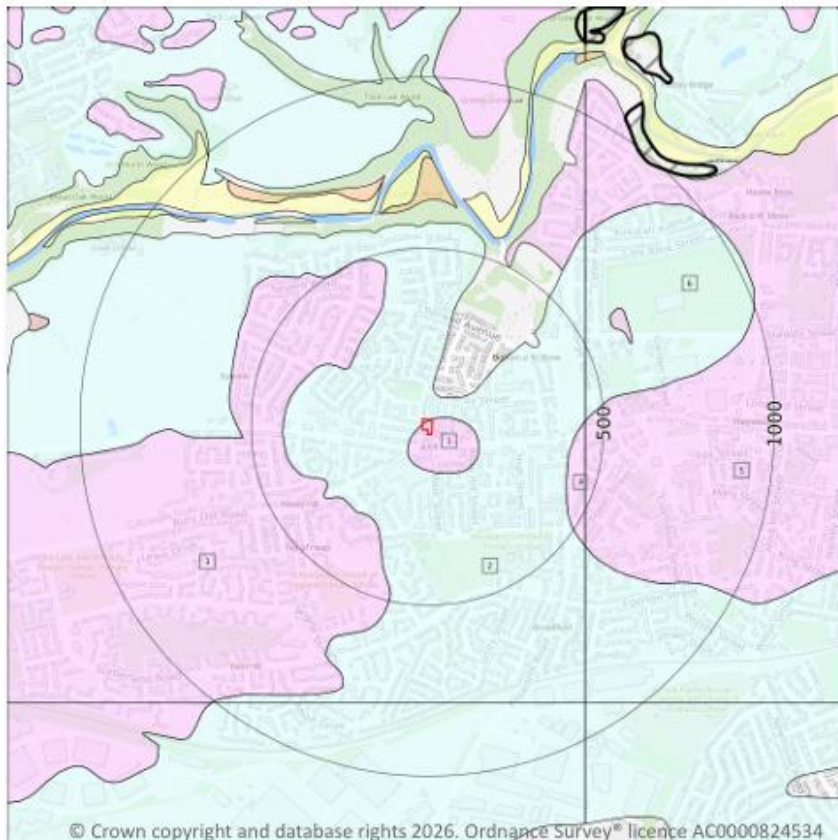
| ID | Location | LEX Code   | Description               | Rock description   |
|----|----------|------------|---------------------------|--------------------|
| A  | 333m E   | WMGR-ARTDP | Infilled Ground           | Artificial deposit |
| 1  | 348m SW  | WGR-VOID   | Worked Ground (Undivided) | Void               |
| 2  | 358m NE  | WMGR-ARTDP | Infilled Ground           | Artificial deposit |
| A  | 408m E   | WMGR-ARTDP | Infilled Ground           | Artificial deposit |



PEOPLES GYM, WHAM STREET,  
HEYWOOD, ROCHDALE, OL10 4QU

Ref: GS-ZHP-LMD-PF6-ZF8  
Your ref: B&L-star works-groundsure  
geoinsight-170726  
Grid ref: 384538 410808

## Geology 1:10,000 scale - Superficial



— Site Outline  
Search buffers in metres (m)  
 Landslip (10k)  
Superficial geology (10k)  
Please see table for more details.

### 1.3 Superficial geology (10k)

Records within 500m

6

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 14 >](#)

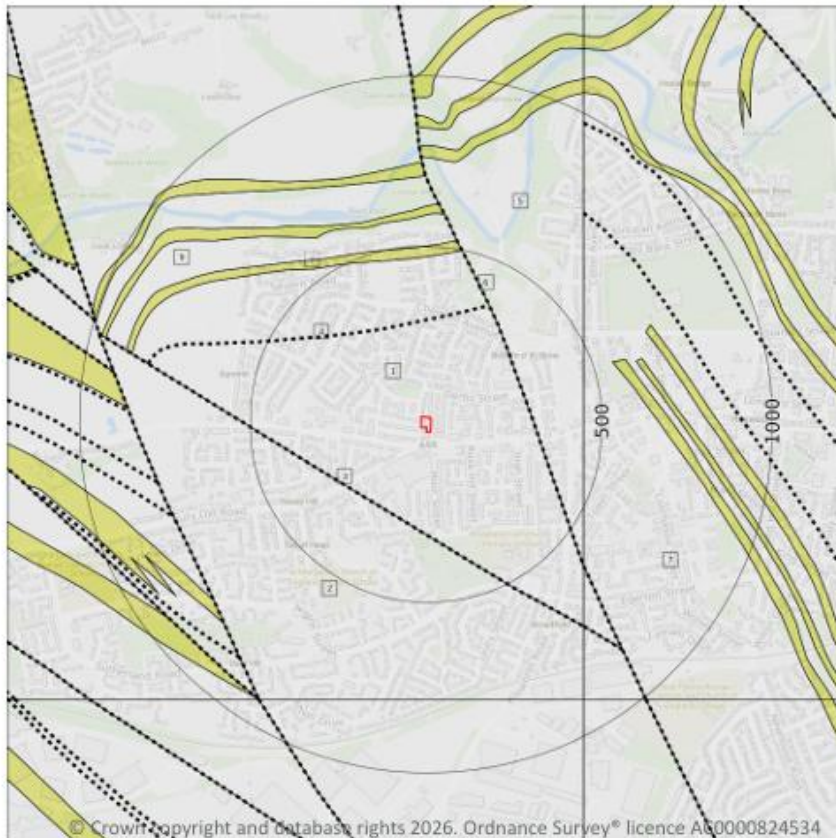
| ID | Location | LEX Code   | Description                                       | Rock description |
|----|----------|------------|---------------------------------------------------|------------------|
| 1  | On site  | GFDUD-XSV  | Glaciofluvial Deposits, Devensian-Sand And Gravel | Sand and gravel  |
| 2  | On site  | TILLD-DMTN | Till, Devensian-Diamicton                         | Diamicton        |
| 3  | 262m NW  | GFDUD-XSV  | Glaciofluvial Deposits, Devensian-Sand And Gravel | Sand and gravel  |



PEOPLES GYM, WHAM STREET,  
HEYWOOD, ROCHDALE, OL10 4QU

Ref: GS-ZHP-LMD-PF6-ZF8  
Your ref: B&L-star works-groundsue  
geosight-170726  
Grid ref: 384538 410808

## Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)  
Please see table for more details.

### 1.5 Bedrock geology (10k)

Records within 500m

6

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 16 >](#)

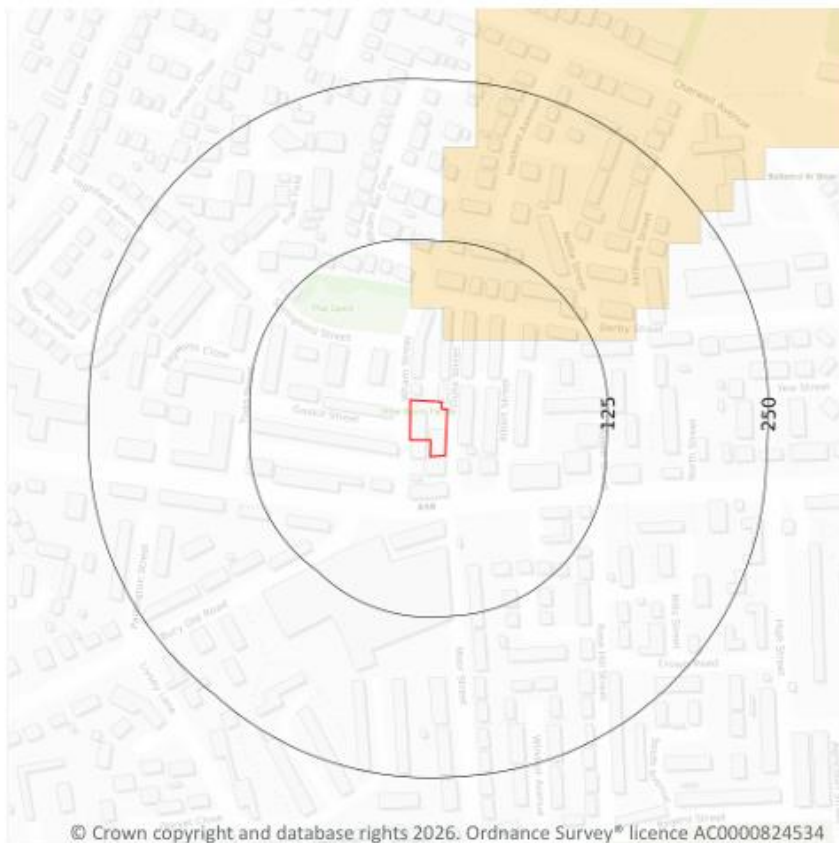
| ID | Location | LEX Code  | Description                                                             | Rock age    |
|----|----------|-----------|-------------------------------------------------------------------------|-------------|
| 1  | On site  | PLCM-MDSS | Pennine Lower Coal Measures Formation-Mudstone, Siltstone And Sandstone | Westphalian |
| 2  | 258m SW  | PLCM-MDSS | Pennine Lower Coal Measures Formation-Mudstone, Siltstone And Sandstone | Westphalian |



PEOPLES GYM, WHAM STREET,  
HEYWOOD, ROCHDALE, OL10 4QU

Ref: GS-ZHP-LMD-PF6-ZF8  
Your ref: B&L-star works-groundsure  
geosight-170726  
Grid ref: 384538 410808

## 7 Radon



- Site Outline
- Search buffers in metres (m)
- Greater than 30%
  - Between 10% and 30%
  - Between 5% and 10%
  - Between 3% and 5%
  - Between 1% and 3%
  - Less than 1%

### 7.1 Radon

#### Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 43](#) >

| Location | Estimated properties affected | Radon Protection Measures required |
|----------|-------------------------------|------------------------------------|
| On site  | Less than 1%                  | None                               |

## 8. APPENDIX D: LANDMARK ENVIROCHECK.

**Envirocheck<sup>®</sup> Report:**  
**Datasheet****Order Details:****Order Number:**

228462660\_1\_1

**Customer Reference:**

tjba-wham st, heywood-landmark

**National Grid Reference:**

384540, 410830

**Slice:**

A

**Site Area (Ha):**

0.05

**Search Buffer (m):**

1000

**Site Details:**

Wham Street

Heywood

OL10 4QU

**Client Details:**

Mr T Booth

TJ Booth Associates

20a Eastgate Street

Rochdale

Lancashire

OL16 1DH



| Report Section        | Page Number |
|-----------------------|-------------|
| Summary               | -           |
| Agency & Hydrological | 1           |
| Waste                 | 19          |
| Hazardous Substances  | 27          |
| Geological            | 28          |
| Industrial Land Use   | 31          |
| Sensitive Land Use    | 40          |
| Data Currency         | 41          |
| Data Suppliers        | 46          |
| Useful Contacts       | 47          |

## 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 this 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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## Report Version v53.0

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## Summary

| Data Type                                                     | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m<br>(*up to 2000m) |
|---------------------------------------------------------------|-------------|---------|-----------|-------------|--------------------------------|
| <b>Agency &amp; Hydrological</b>                              |             |         |           |             |                                |
| BGS Groundwater Flooding Susceptibility                       | pg 1        | Yes     | Yes       | Yes         | n/a                            |
| Contaminated Land Register Entries and Notices                | pg 2        |         |           | 1           | 1                              |
| Discharge Consents                                            | pg 3        |         |           | 3           | 5                              |
| Prosecutions Relating to Controlled Waters                    |             |         | n/a       | n/a         | n/a                            |
| Enforcement and Prohibition Notices                           |             |         |           |             |                                |
| Integrated Pollution Controls                                 |             |         |           |             |                                |
| Integrated Pollution Prevention And Control                   | pg 5        |         |           |             | 1                              |
| Local Authority Integrated Pollution Prevention And Control   |             |         |           |             |                                |
| Local Authority Pollution Prevention and Controls             | pg 5        |         | 1         |             | 2                              |
| Local Authority Pollution Prevention and Control Enforcements |             |         |           |             |                                |
| Nearest Surface Water Feature                                 | pg 5        |         | Yes       |             |                                |
| Pollution Incidents to Controlled Waters                      | pg 5        |         |           |             | 7                              |
| Prosecutions Relating to Authorised Processes                 |             |         |           |             |                                |
| Registered Radioactive Substances                             |             |         |           |             |                                |
| River Quality                                                 | pg 6        |         |           |             | 1                              |
| River Quality Biology Sampling Points                         |             |         |           |             |                                |
| River Quality Chemistry Sampling Points                       |             |         |           |             |                                |
| Substantiated Pollution Incident Register                     |             |         |           |             |                                |
| Water Abstractions                                            | pg 7        |         |           |             | (*30)                          |
| Water Industry Act Referrals                                  |             |         |           |             |                                |
| Groundwater Vulnerability Map                                 | pg 14       | Yes     | n/a       | n/a         | n/a                            |
| Groundwater Vulnerability - Soluble Rock Risk                 |             |         | n/a       | n/a         | n/a                            |
| Bedrock Aquifer Designations                                  | pg 14       | Yes     | n/a       | n/a         | n/a                            |
| Superficial Aquifer Designations                              | pg 14       | Yes     | 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                            |
| OS Water Network Lines                                        | pg 15       |         |           |             | 30                             |

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## Summary

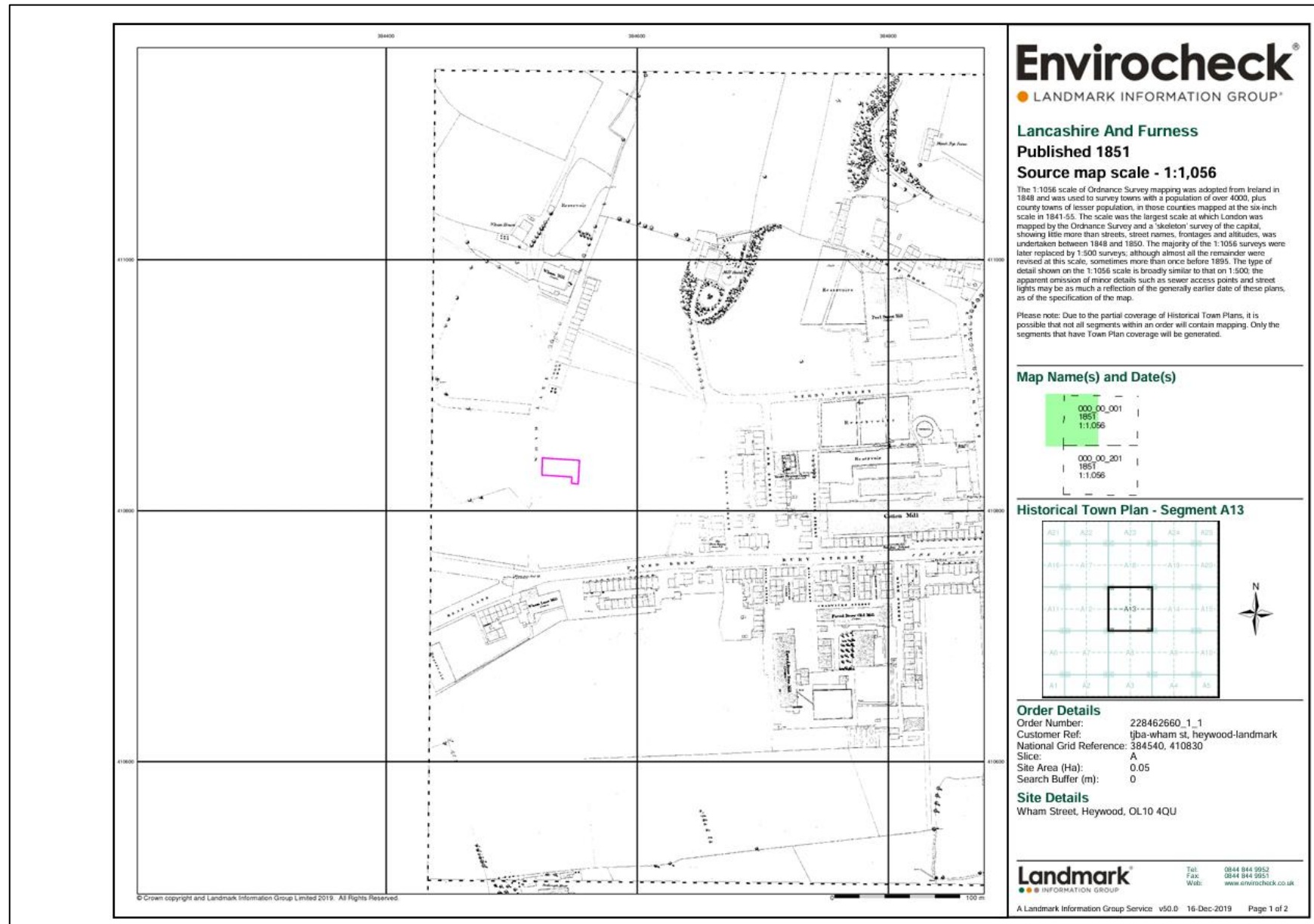
| Data Type                                                           | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m<br>(*up to 2000m) |
|---------------------------------------------------------------------|-------------|---------|-----------|-------------|--------------------------------|
| <b>Waste</b>                                                        |             |         |           |             |                                |
| BGS Recorded Landfill Sites                                         | pg 19       |         |           | 1           | 1                              |
| Historical Landfill Sites                                           | pg 19       |         |           | 1           | 4                              |
| Integrated Pollution Control Registered Waste Sites                 |             |         |           |             |                                |
| Licensed Waste Management Facilities (Landfill Boundaries)          |             |         |           |             |                                |
| Licensed Waste Management Facilities (Locations)                    | pg 20       |         |           | 3           | 2                              |
| Local Authority Landfill Coverage                                   |             | 1       | n/a       | n/a         | n/a                            |
| Local Authority Recorded Landfill Sites                             |             |         |           |             |                                |
| Registered Landfill Sites                                           | pg 22       |         |           |             | 4                              |
| Registered Waste Transfer Sites                                     | pg 25       |         |           |             | 2                              |
| Registered Waste Treatment or Disposal Sites                        | pg 26       |         |           | 1           | 1                              |
| <b>Hazardous Substances</b>                                         |             |         |           |             |                                |
| Control of Major Accident Hazards Sites (COMAH)                     | pg 27       |         |           |             | 1                              |
| Explosive Sites                                                     |             |         |           |             |                                |
| Notification of Installations Handling Hazardous Substances (NIHHS) |             |         |           |             |                                |
| Planning Hazardous Substance Consents                               |             |         |           |             |                                |
| Planning Hazardous Substance Enforcements                           |             |         |           |             |                                |
| <b>Geological</b>                                                   |             |         |           |             |                                |
| BGS 1:625,000 Solid Geology                                         | pg 28       | Yes     | n/a       | n/a         | n/a                            |
| BGS Recorded Mineral Sites                                          | pg 28       |         |           | 2           | 8                              |
| CBSCB Compensation District                                         |             |         | n/a       | n/a         | n/a                            |
| Coal Mining Affected Areas                                          | pg 29       | Yes     | n/a       | n/a         | n/a                            |
| Mining Instability                                                  | pg 29       | Yes     | n/a       | n/a         | n/a                            |
| Man-Made Mining Cavities                                            |             |         |           |             |                                |
| Natural Cavities                                                    |             |         |           |             |                                |
| Non Coal Mining Areas of Great Britain                              |             |         |           | n/a         | n/a                            |
| Potential for Collapsible Ground Stability Hazards                  | pg 30       | 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 30       | Yes     |           | n/a         | n/a                            |
| Potential for Running Sand Ground Stability Hazards                 | pg 30       | Yes     |           | n/a         | n/a                            |
| Potential for Shrinking or Swelling Clay Ground Stability Hazards   | pg 30       | 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                            |

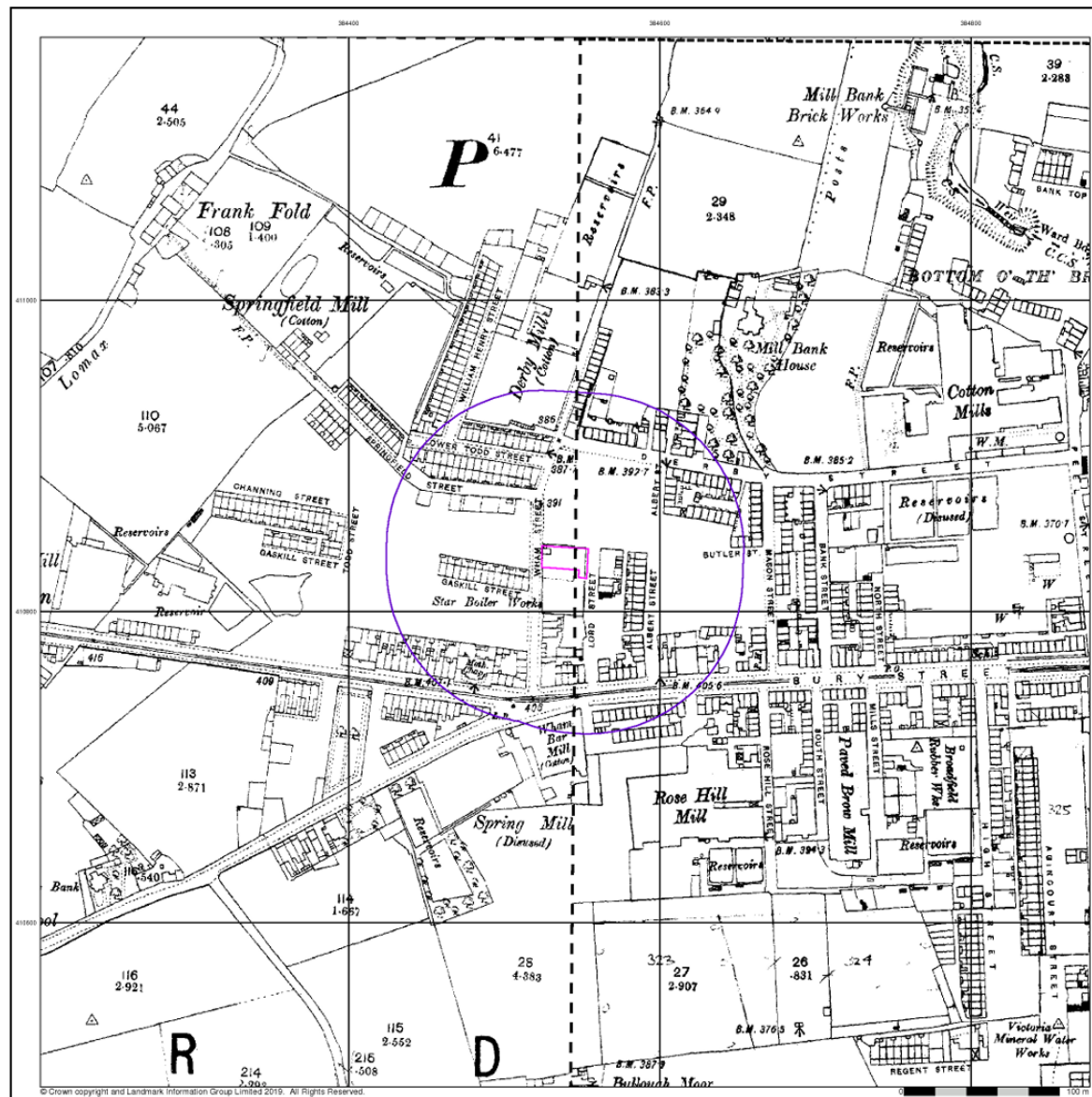
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## Summary

| Data Type                            | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m<br>(*up to 2000m) |
|--------------------------------------|-------------|---------|-----------|-------------|--------------------------------|
| <b>Industrial Land Use</b>           |             |         |           |             |                                |
| Contemporary Trade Directory Entries | pg 31       | 2       | 23        | 21          | 57                             |
| Fuel Station Entries                 | pg 39       |         |           |             | 1                              |
| Gas Pipelines                        |             |         |           |             |                                |
| Underground Electrical Cables        |             |         |           |             |                                |
| <b>Sensitive Land Use</b>            |             |         |           |             |                                |
| Ancient Woodland                     | pg 40       |         |           |             | 3                              |
| Areas of Adopted Green Belt          | pg 40       |         |           | 1           | 1                              |
| 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             |             |         |           |             |                                |
| Ramsar Sites                         |             |         |           |             |                                |
| Sites of Special Scientific Interest |             |         |           |             |                                |
| Special Areas of Conservation        |             |         |           |             |                                |
| Special Protection Areas             |             |         |           |             |                                |
| World Heritage Sites                 |             |         |           |             |                                |





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## Lancashire And Furness

Published 1893 - 1894

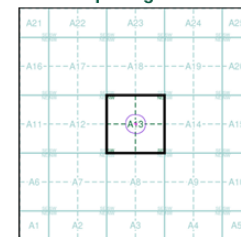
Source map scale - 1:2,500

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)

|                           |                           |
|---------------------------|---------------------------|
| 088_06<br>1894<br>1:2,500 | 088_07<br>1893<br>1:2,500 |
| 088_10<br>1893<br>1:2,500 | 088_11<br>1893<br>1:2,500 |

### Historical Map - Segment A13



### Order Details

Order Number: 228462660\_1\_1  
Customer Ref: tjba-wham st, heywood-landmark  
National Grid Reference: 384540, 410830  
Slice: A  
Site Area (Ha): 0.05  
Search Buffer (m): 100

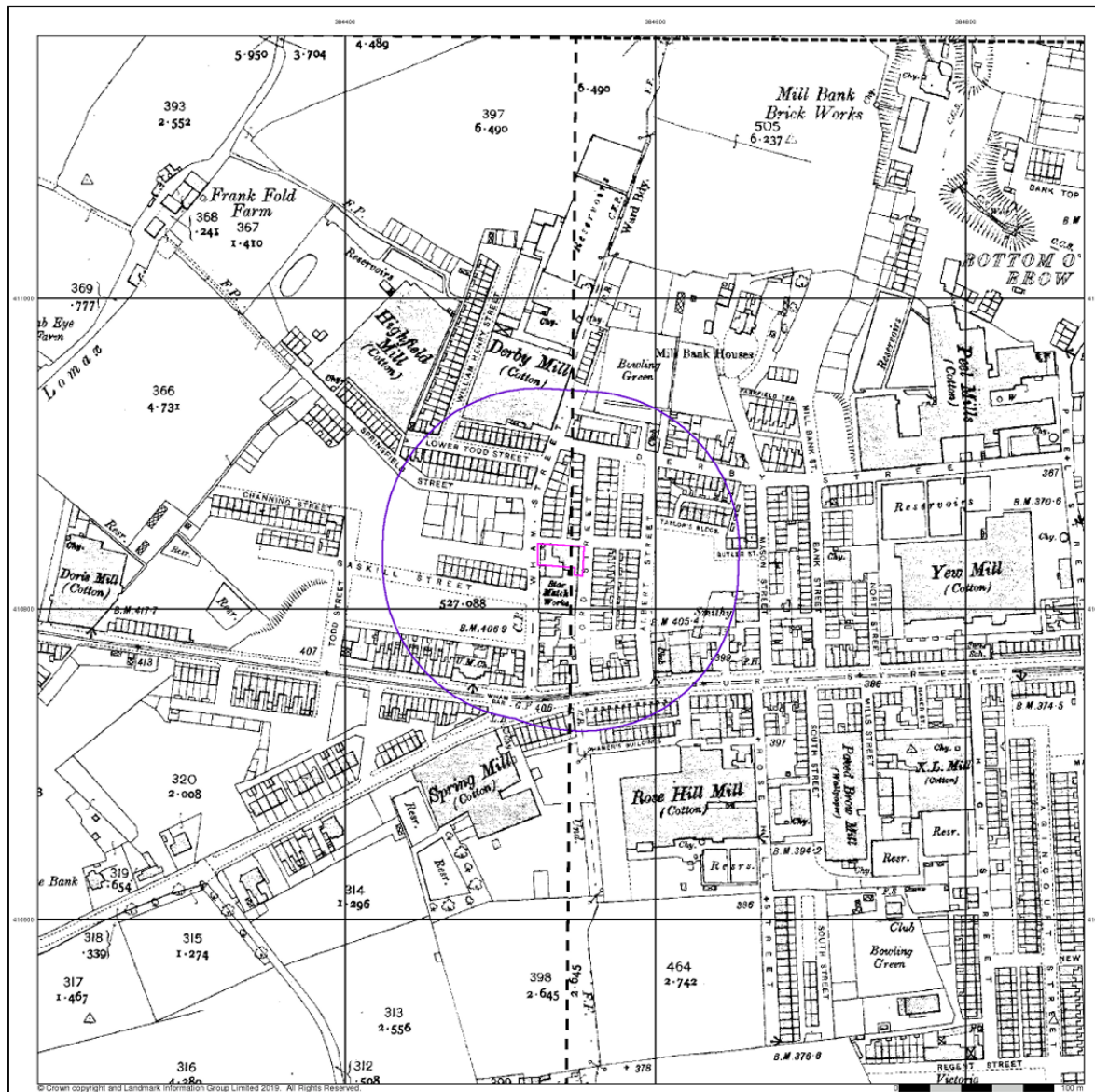
### Site Details

Wham Street, Heywood, OL10 4QU

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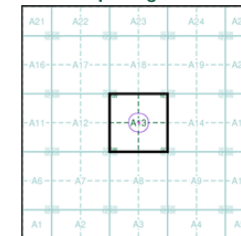
Source map scale - 1:2,500

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### Map Name(s) and Date(s)

|                           |                           |
|---------------------------|---------------------------|
| 088.06<br>1910<br>1:2,500 | 088.07<br>1910<br>1:2,500 |
| 088.10<br>1910<br>1:2,500 | 088.11<br>1910<br>1:2,500 |

### Historical Map - Segment A13



### Order Details

Order Number: 228462660\_1\_1  
 Customer Ref: tjba-wham st. heywood-landmark  
 National Grid Reference: 384540, 410830  
 Slice: A  
 Site Area (Ha): 0.05  
 Search Buffer (m): 100

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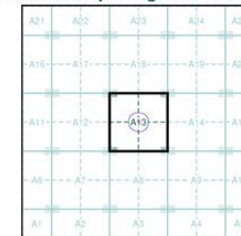
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## Map Name(s) and Date(s)

|                           |                           |
|---------------------------|---------------------------|
| 088 06<br>1929<br>1:2,500 | 088 07<br>1930<br>1:2,500 |
| 088 10<br>1929<br>1:2,500 | 088 11<br>1929<br>1:2,500 |

## Historical Map - Segment A13



## Order Details

Order Number: 228462660\_1\_1  
 Customer Ref: tjba-wham st. heywood-landmark  
 National Grid Reference: 384540, 410830  
 Slice: A  
 Site Area (Ha): 0.05  
 Search Buffer (m): 100

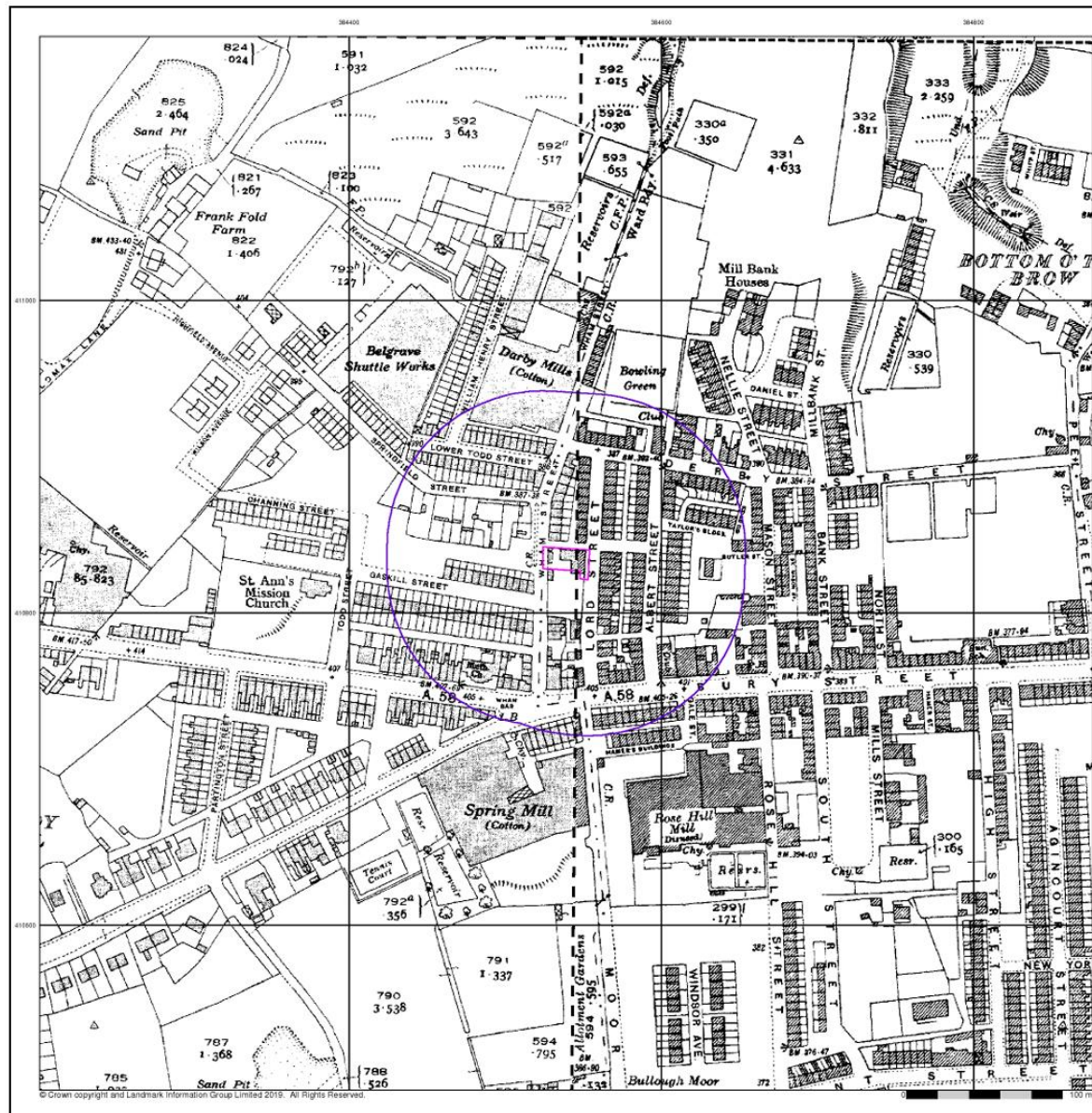
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Lancashire And Furness

Published 1937

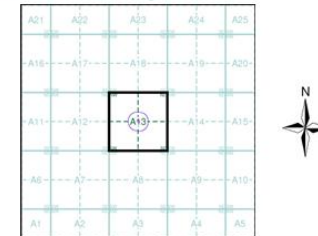
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## Map Name(s) and Date(s)

|                           |                           |
|---------------------------|---------------------------|
| 088.06<br>1937<br>1:2,500 | 088.07<br>1937<br>1:2,500 |
| 088.10<br>1937<br>1:2,500 | 088.11<br>1937<br>1:2,500 |

## Historical Map - Segment A13



## Order Details

Order Number: 228462660\_1\_1  
 Customer Ref: tjba-wham st. heywood-landmark  
 National Grid Reference: 384540, 410830  
 Slice: A  
 Site Area (Ha): 0.05  
 Search Buffer (m): 100

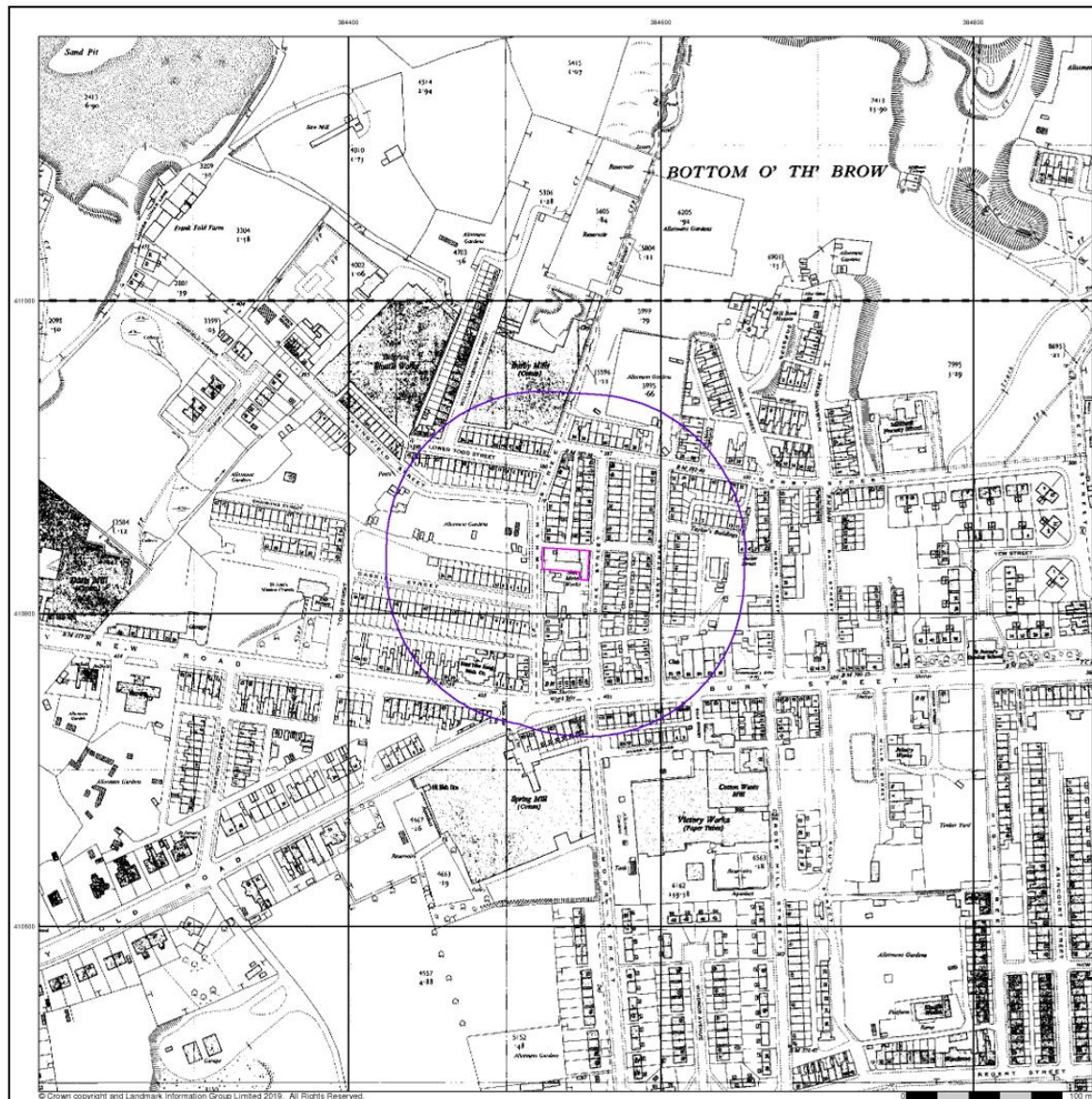
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## Ordnance Survey Plan Published 1957

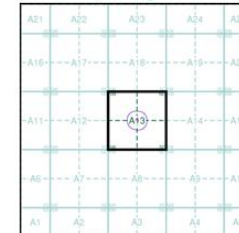
Source map scale - 1:2,500

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## Map Name(s) and Date(s)

SD8411  
1957  
1:2,500

## Historical Map - Segment A13



## Order Details

Order Number: 228462660\_1\_1  
Customer Ref: tjba-wham st, heywood-landmark  
National Grid Reference: 384540, 410830  
Slice: A  
Site Area (Ha): 0.05  
Search Buffer (m): 100

## Site Details

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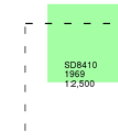
**Ordnance Survey Plan**

**Published 1969**

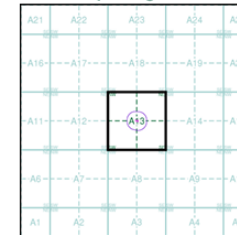
**Source map scale - 1:2,500**

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**

Order Number: 228462660\_1\_1  
Customer Ref: tjba-wham st, heywood-landmark  
National Grid Reference: 384540, 410830  
Slice: A  
Site Area (Ha): 0.05  
Search Buffer (m): 100

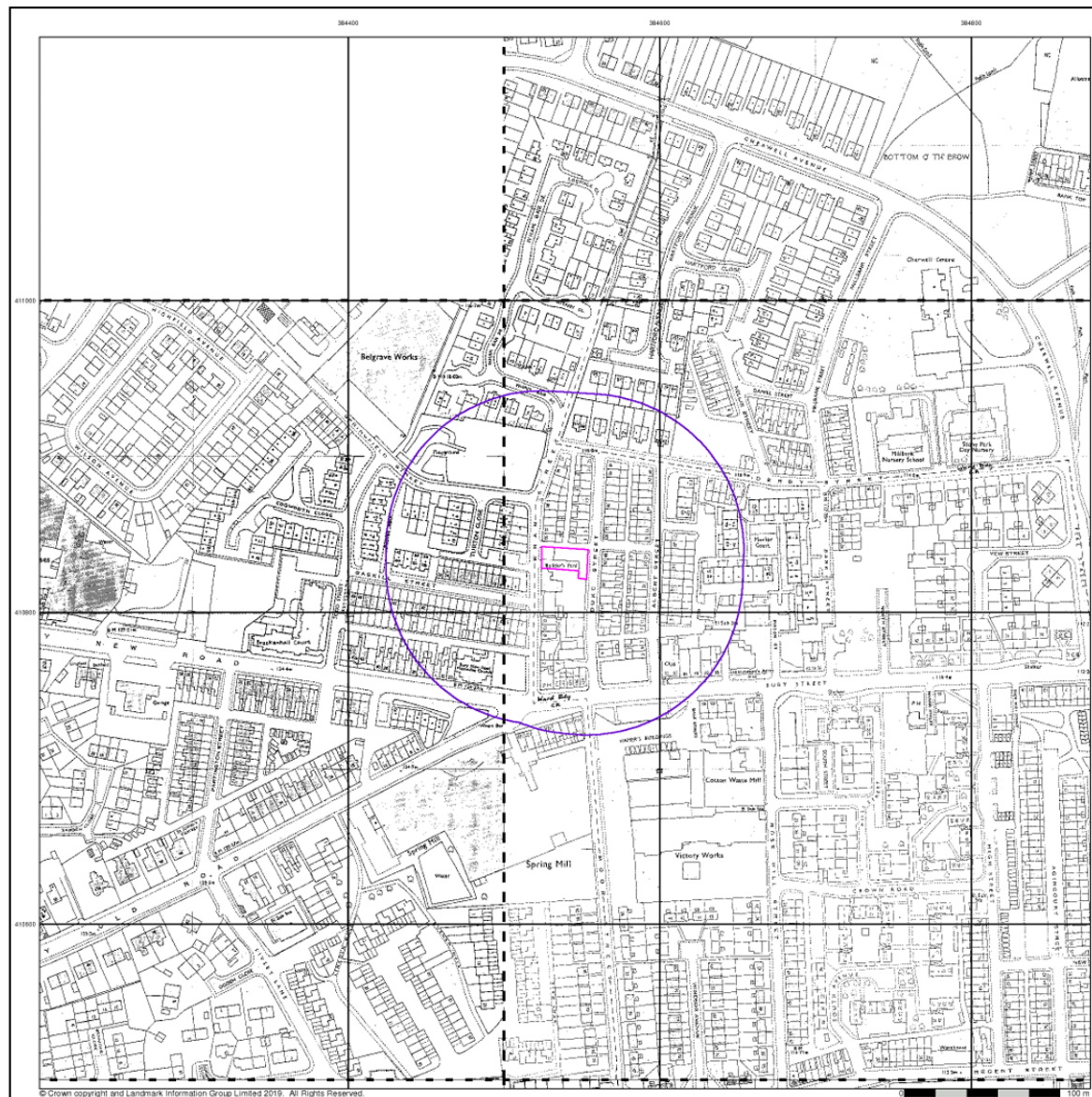
**Site Details**

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**Landmark**  
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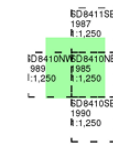
## Additional SIMs

Published 1985 - 1990

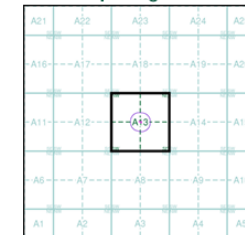
Source map scale - 1:1,250

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

Order Number: 228462660\_1\_1  
 Customer Ref: tjba-wham st, heywood-landmark  
 National Grid Reference: 384540, 410830  
 Slice: A  
 Site Area (Ha): 0.05  
 Search Buffer (m): 100

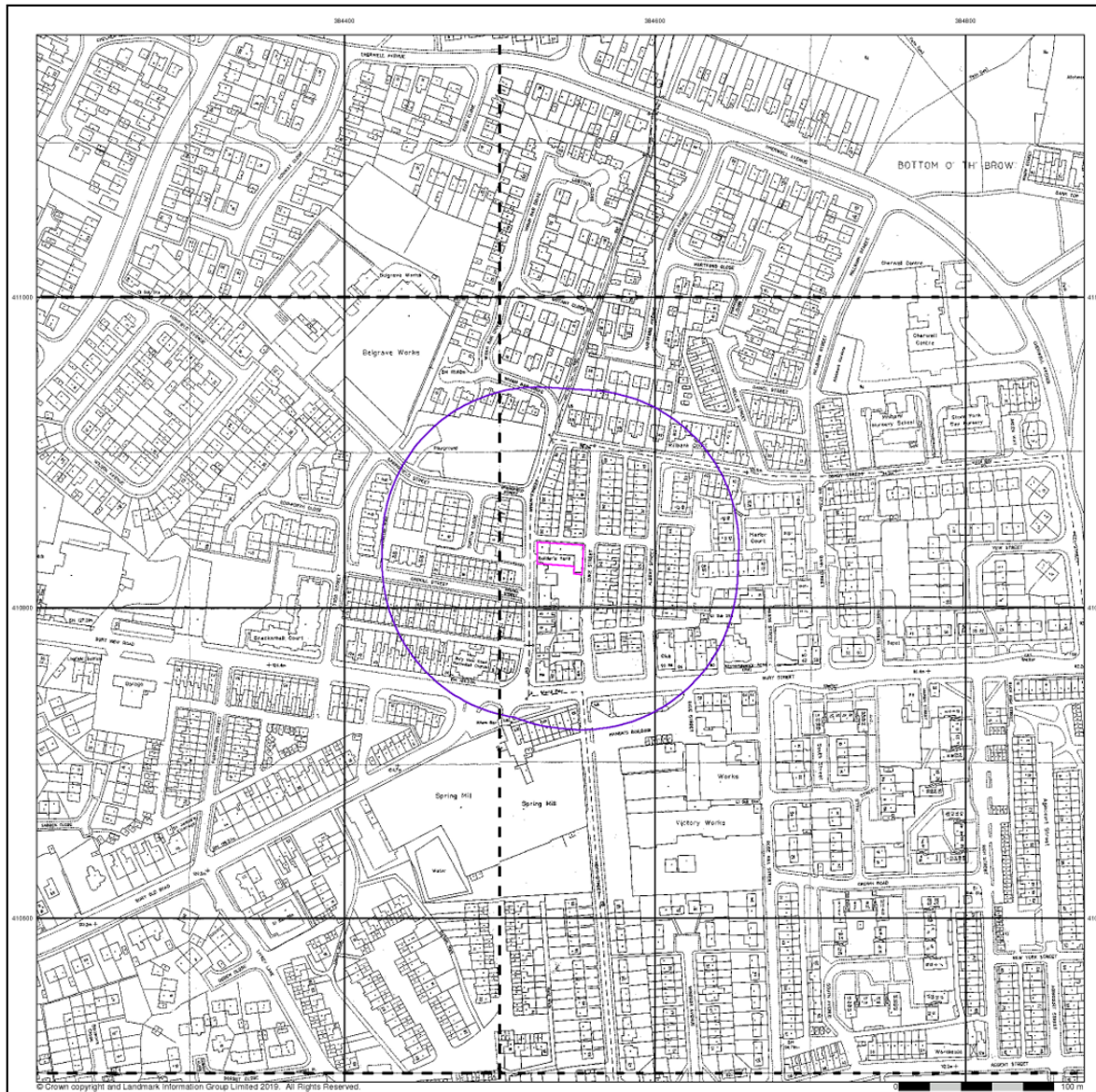
## Site Details

Wham Street, Heywood, OL10 4QU

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**Large-Scale National Grid Data**  
Published 1992

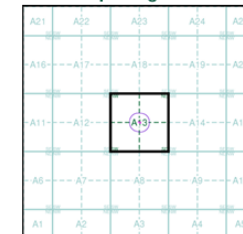
**Source map scale - 1:1,250**

'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)

IDB41TSV084118E  
992 992  
1:1,250 1:1,250  
IDB410NW08410NE  
992 992  
1:1,250 1:1,250  
IDB410SV08410SE  
992 992  
1:1,250 1:1,250

## Historical Map - Segment A13



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