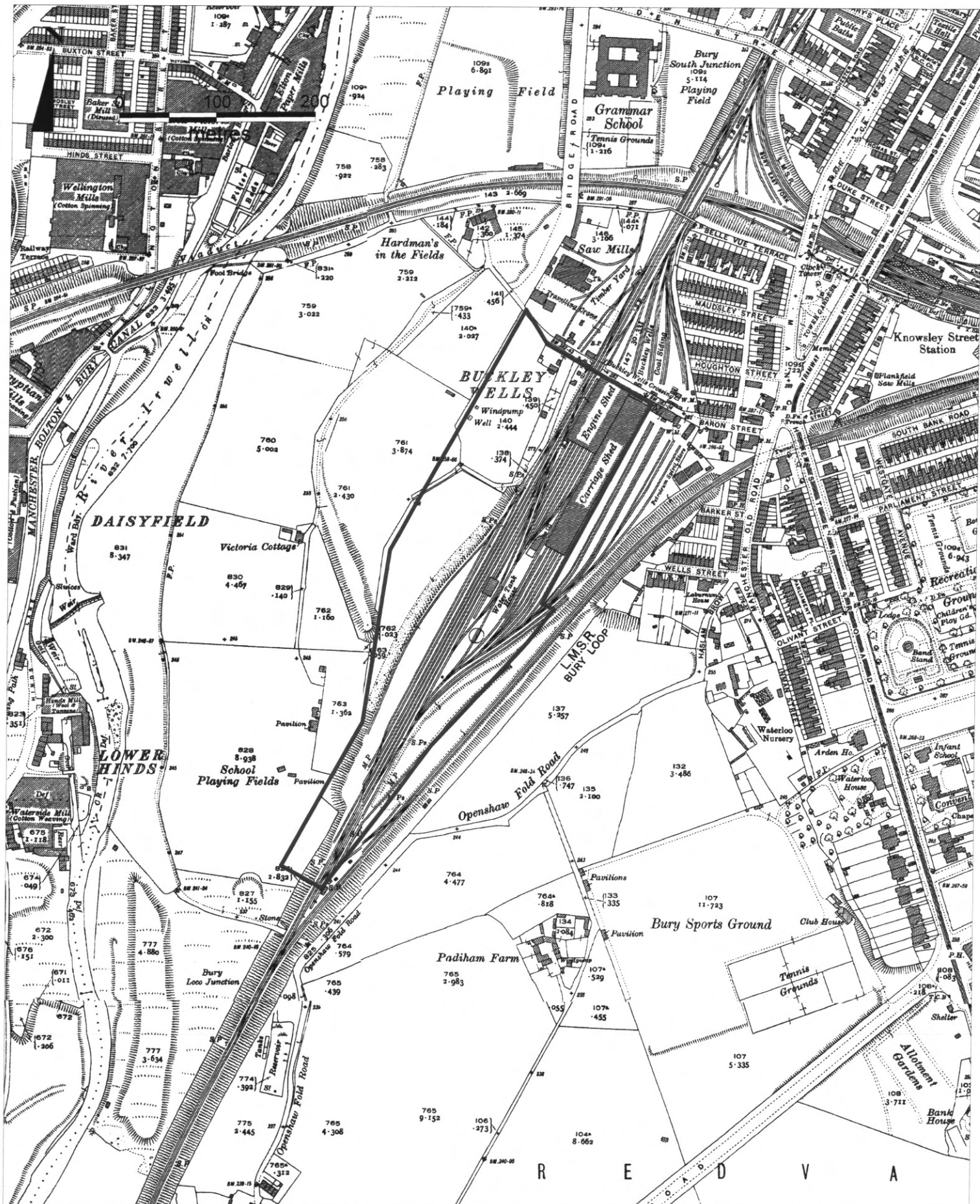




KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1930 Map

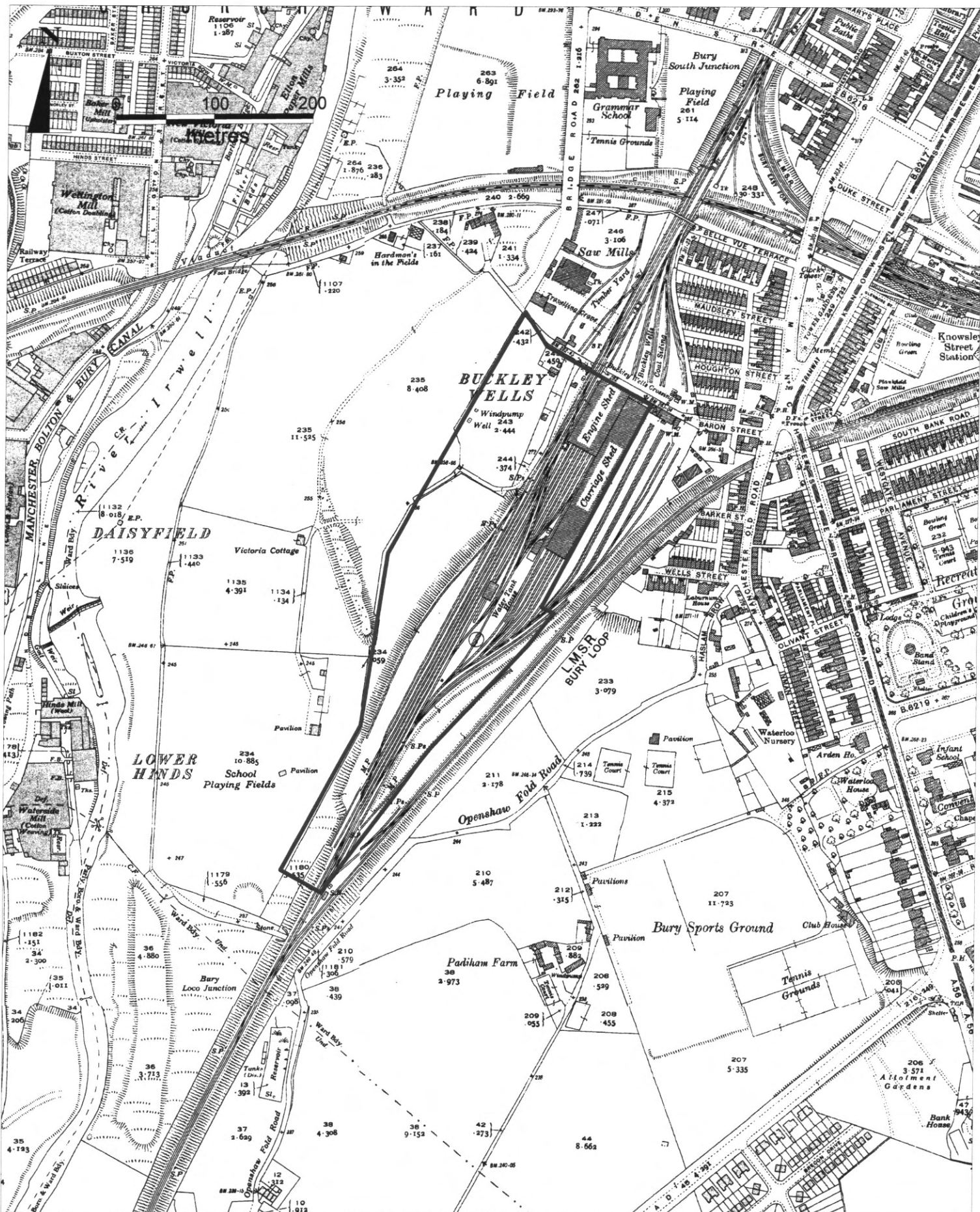
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:5000 Date: October 2005





KEY:
☐ Site Boundary

TITLE:
 Buckley Wells Locomotive Works
 1937 Map

(C) Crown Copyright. All rights reserved.
 Bury MBC 100023063/2005

NGR: 379818 410010
 SCALE (approx): 1:5000 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1940s Aerial Photograph

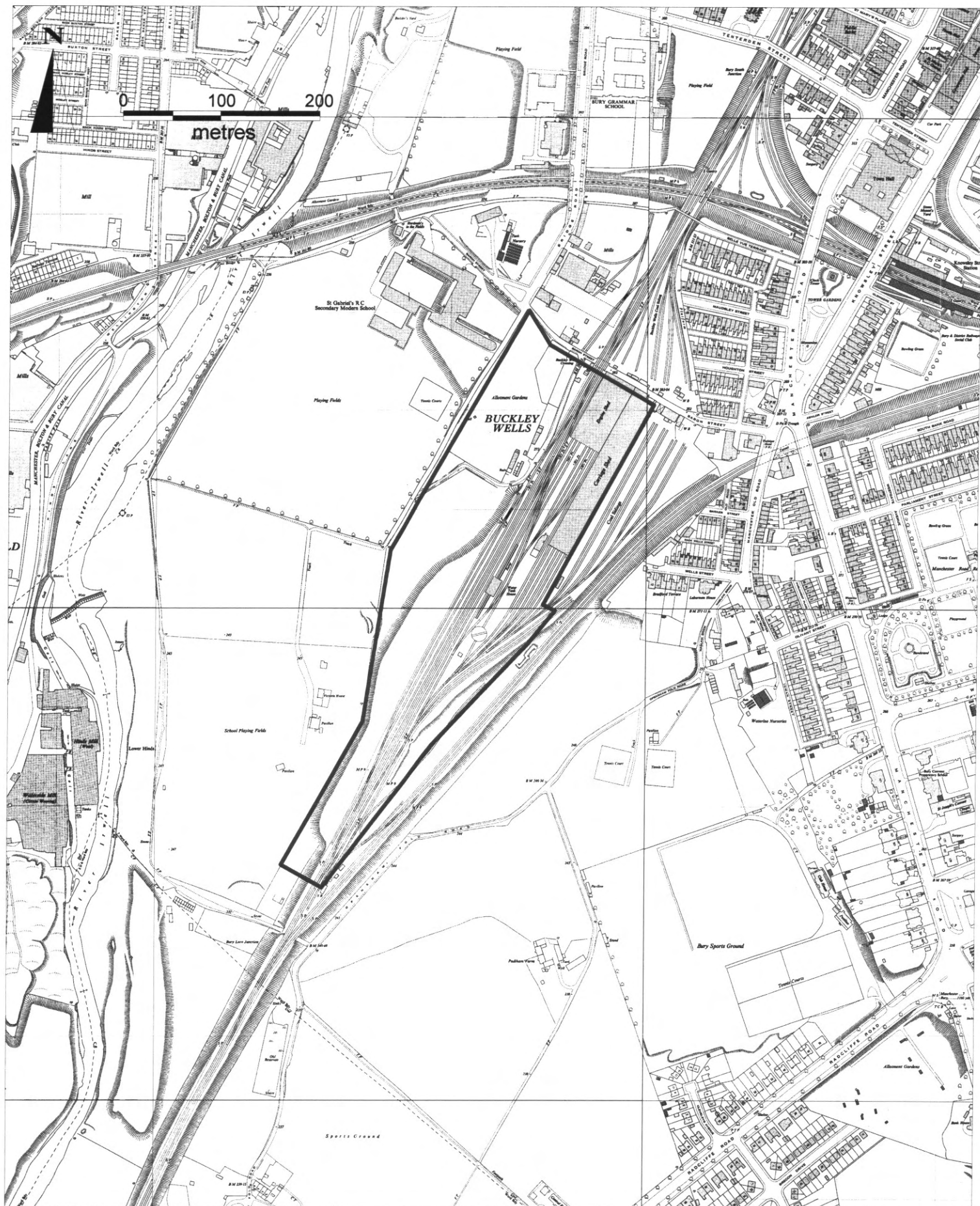
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:2500 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1957/8 Map

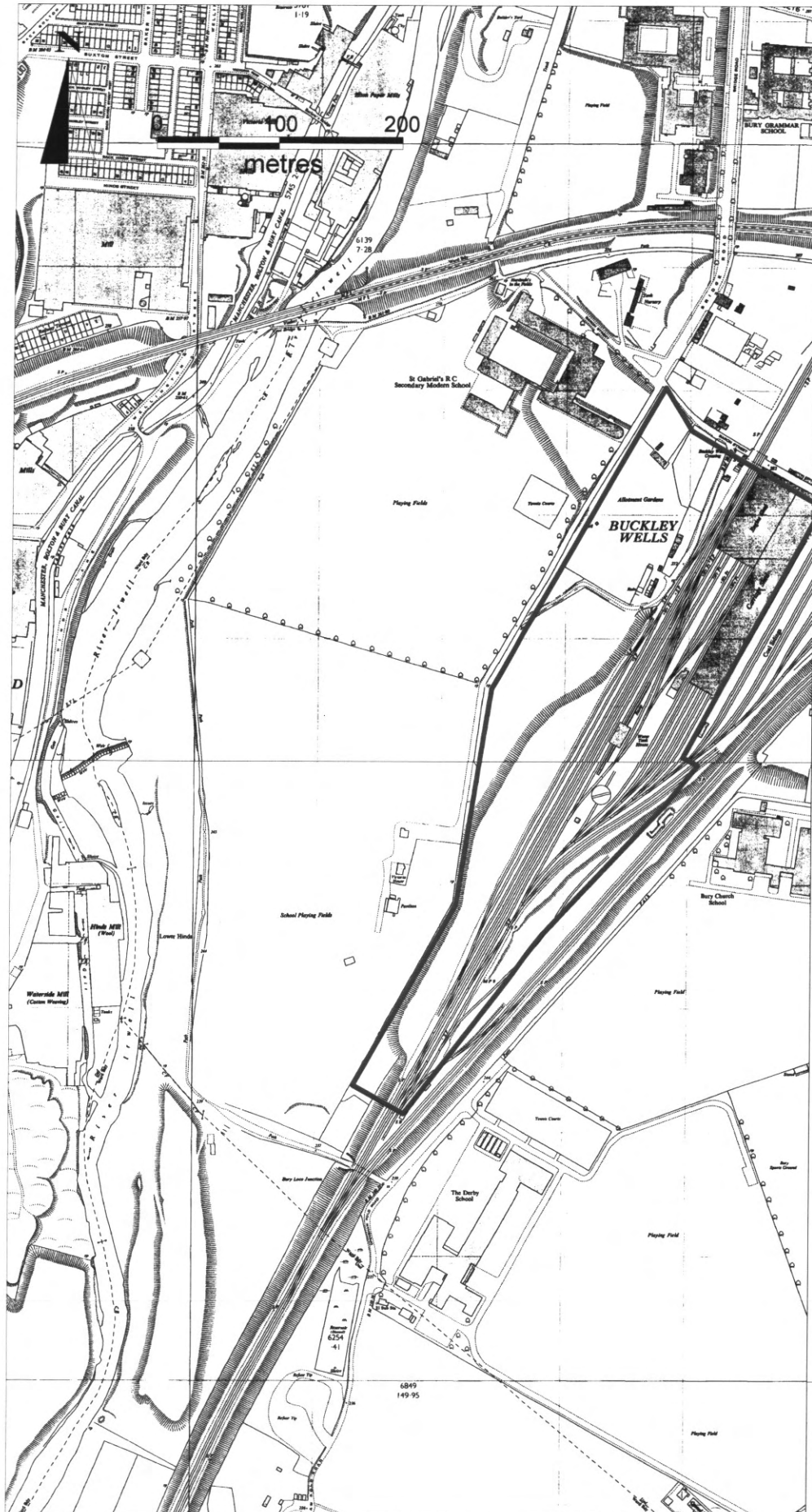
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:5000 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1970 Map

(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:5000 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1979 Aerial Photograph

(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:2500 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1989 Aerial Photograph

(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:2500 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

1997 Aerial Photograph

(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:2500 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

2000 Aerial Photograph

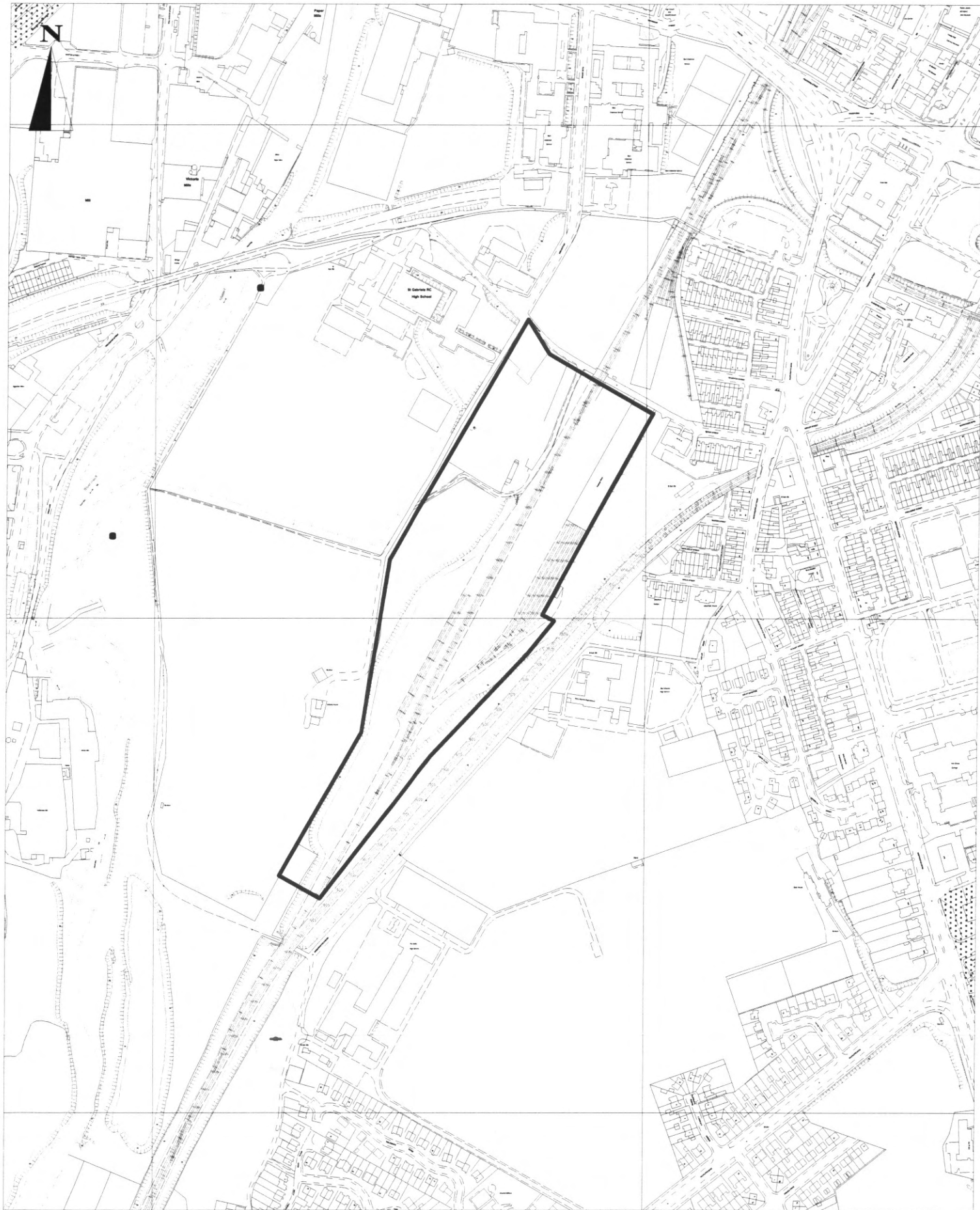
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:2500 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

Current OS Plan

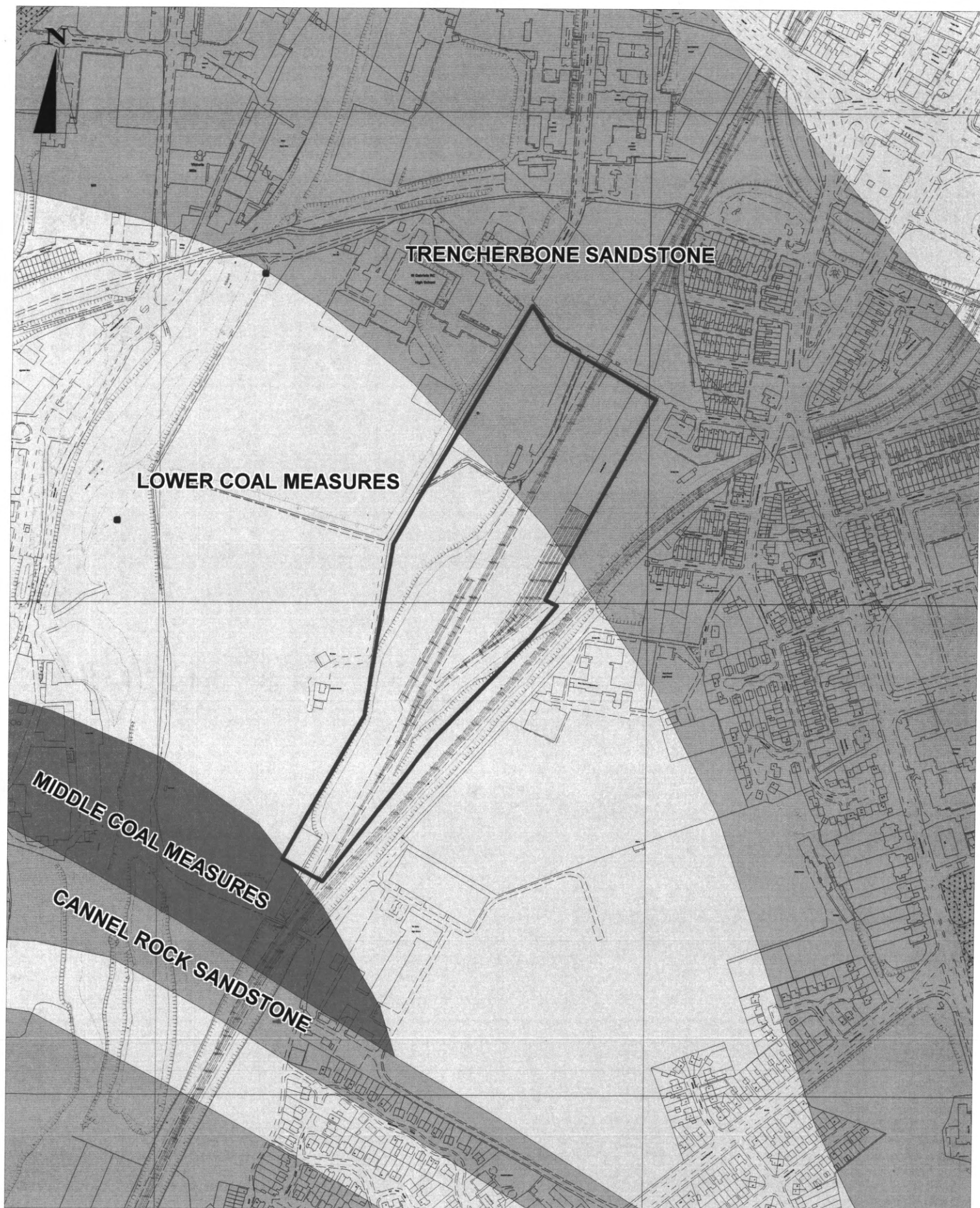
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:5000 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

Solid Geology

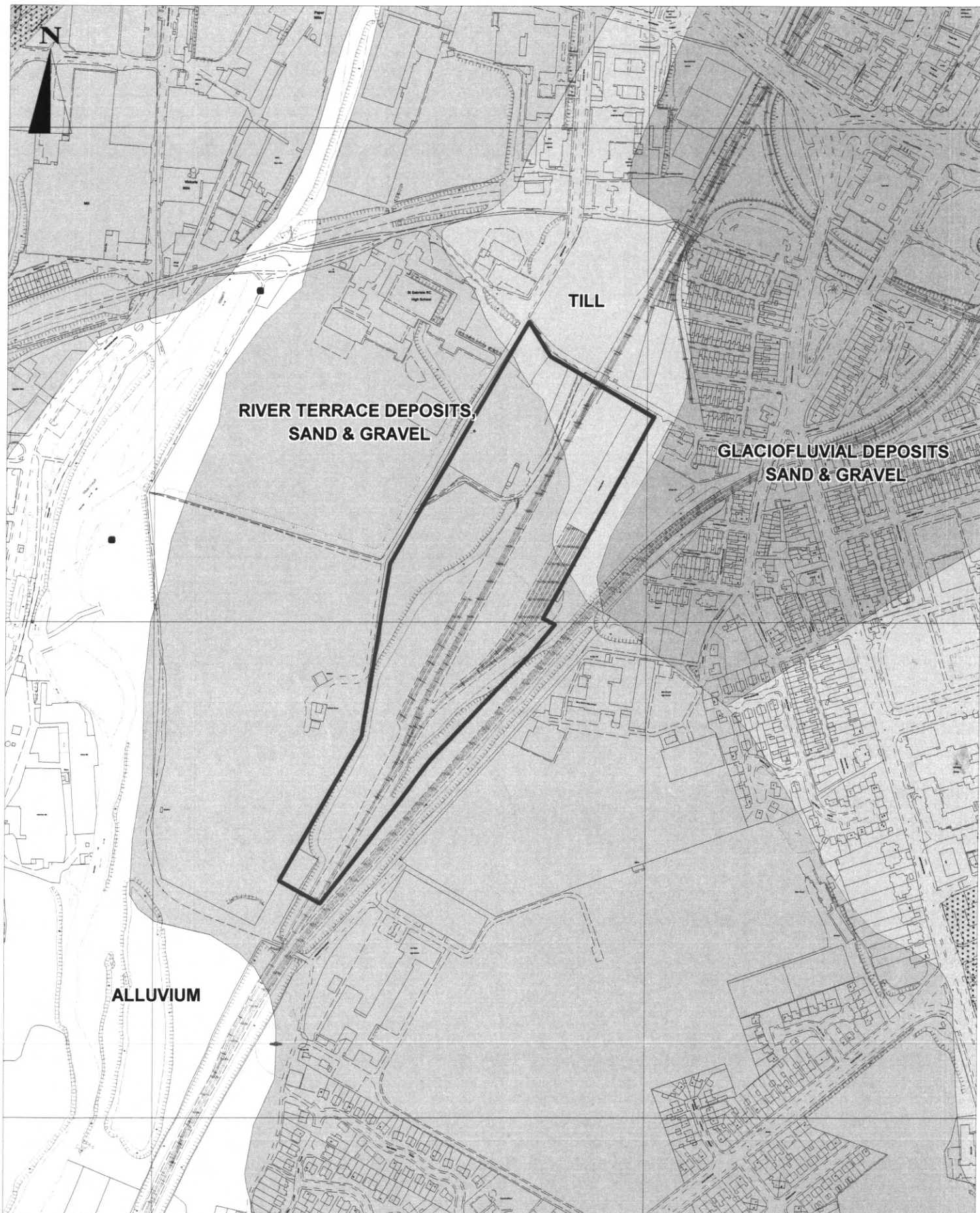
(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1:5000 Date: October 2005





KEY:



Site Boundary

TITLE:

Buckley Wells Locomotive Works

Drift Geology

(C) Crown Copyright. All rights reserved.

Bury MBC 100023063/2005

NGR: 379818 410010

SCALE (approx): 1" : 5000 Date: October 2005



APPENDIX B

CRH EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

- 1.0 Campbell Reith Hill were commissioned by the Bury Metropolitan Borough Council (Bury MBC) to undertake preliminary contamination and geotechnical investigation works at the Buckley Wells Locomotive Depot in Bury.
- 2.0 The scope of works for the investigation was based upon the brief provided by Bury MBC to enable an appropriate assessment of the site in view of its current and proposed uses. As part of the project brief, preliminary desk study works were also undertaken to supplement existing knowledge of the site, aid in the design of the investigation works, and to assess the suspected presence of coal workings at the site.
- 3.0 The geotechnical data, interpretation and recommendations for foundation design and ground stability issues are contained in FES's report contained in Appendix 6.
- 4.0 The Buckley Wells site is roughly triangular in shape and can be divided into distinct sectors (see Figure 6955/03). The eastern sector is the main working area for the repair and upgrading of steam locomotives, which has been extended by a large embankment of tipped boiler ash, now covered in coarse vegetation, along the western side of the site. The embankment drops down to a lower overgrown area. The north western part of the site comprises an upper overgrown area, which drops down to the lower area, and an area of allotment gardens.
- 5.0 Detailed proposals have not been finalised with respect to the site's potential redevelopment, however they are likely to include an extension to the existing railway depot, tourism, leisure and/or commercial uses.
- 6.0 A planning permission also exists to excavate and remove the ash embankment for inclusion in the production of building stones. A number of issues were raised regarding this application, including the unknown nature of the deposits, the potential for dust production and the possible presence of asbestos.
- 7.0 The site is underlain by Drift Deposits of Boulder Clay and to the south by River Terrace Deposits. These in turn are underlain by the Carboniferous Coal Measures. The site in general lies within a Minor aquifer area, and is considered to be situated in an environmental setting of low to medium sensitivity.
- 8.0 The eastern part of the site has been operational railway land for over 100 years, and the remainder of the site has principally been open fields and/or allotment gardens.
- 9.0 A number of known or suspected landfill sites have been identified within the vicinity of the site, as well as several prescribed processes. These are not considered to present a significant contamination risk to the site.
- 10.0 A non-intrusive appraisal of coal mining issues undertaken by Campbell Reith Hill concluded the following:
 - Very little information exists regarding the suspected mine shafts;

- The information used to form the basis of the suspected presence of mine shafts is not very accurate;
- The shafts, if present would be in excess of 25m deep to enable interception of the underlying coal seams;
- The age of the shafts is likely to be pre-1850s, and they have probably collapsed or been infilled;
- New loadings due to new buildings may present low level risks due to stability problems;
- Intrusive investigations of proposed building footprints and their immediate vicinity are recommended.

11.0 The contamination investigation works comprised the excavation of 9 No. boreholes and 15 No. trial pits, the collection and analysis of soil samples and subsequent gas and groundwater monitoring of 6 No. boreholes fitted with installations.

12.0 Made ground was encountered at nearly all locations, and was of variable depths, but typically comprised either an ash sand and gravel or a reworked sandy clay with ash. Drift deposits were encountered at all locations, and the underlying Solid geology was encountered in only one location, at 13.8m bgl.

13.0 Only limited contamination was encountered across the site. Contamination typical of ash deposits, by metals such as arsenic, copper and zinc, was observed and was associated with the ash-containing made ground soils. No evidence of significant hydrocarbon or asbestos contamination was encountered. Subsequent leaching tests suggested the metallic contamination was of low availability. No significant groundwater contamination was observed, although only one monitoring visit has been undertaken to date.

14.0 No potentially putrescible materials were encountered at the site, however at depth the site is known to be underlain by coal measures. Significant methane concentrations were recorded at one borehole (G4), with methane not detected at the other locations. Low levels of carbon dioxide were recorded at all borehole locations, however the concentrations were considered potentially hazardous in one well only (BH C1A). Correspondingly depleted oxygen levels, and no significant gas flows were associated with these elevated gas readings. No significant risks due to hazardous gases were considered to exist to existing on site buildings (the carriage shed), however potentially significant risks to new structures may exist dependent upon their final locations and design.

15.0 A preliminary risk assessment undertaken for the site is summarised in Table 2, however the following were the main identified risks:

- | | |
|---|----------------------|
| • Risk to proposed plants/vegetation | MEDIUM |
| • Risk to new proposed structures due to hazardous gases | MEDIUM |
| • Risk to construction workers | MEDIUM |
| • Risk to any new infrastructure from on site contamination | LOW TO MEDIUM |