COAL MINING RISK ASSESSMENT FOR THE KINGS HEAD PUBLIC HOUSE, DARTON LANE, MAPPLEWELL, BARNSLEY, S75 6AP

17-05-03 Revision 0

REPORT STATUS: FINAL

MAY 2017

Prepared for

MCD Construction Consultancy

This report has been prepared under the framework of BS EN 9001:2008

Prepared by

Demeter Environmental Ltd

Liverpool Office:
Hanover House
Hanover Street
Liverpool, L1 3DZ
Tel: 0151 521 2539
Fax: 0151 909 3661

Brighton Office:
Gemini House
136-140 Old Shoreham Road
Brighton, East Sussex
BN3 7BD
Tel: 01273 741 727

Email: enquiries@demeter-environmental.co.uk

Website: http://www.demeter-environmental.co.uk

DOCUMENT ISSUE FORM

Client:	MCD Construction Consultancy
Project Title:	COAL MINING RISK ASSESSMENT FOR THE KINGS HEAD PUBLIC HOUSE, DARTON LANE, MAPPLEWELL, BARNSLEY, S75 6AP
Reference Number:	17-03-11
Prepared by:	Despo Hadjikyriacou BEng(Hons) BSc(Hons) PGDip MInstP and Despo Hadjikyriacou BEng(Hons) BSc(Hons) PGDip MInstP
	
Checked by:	Paul Hadjikyriacou MPhil MPhys MRes(Contaminated Land Management) AIEMA MInstP
	
Reviewed by:	Paul Hadjikyriacou MPhil MPhys MRes(Contaminated Land Management) AIEMA MInstP
	
Approved by:	Paul Hadjikyriacou MPhil MPhys MRes(Contaminated Land Management) AIEMA MInstP
	
For and behalf of Demeter Environmental Ltd	
Date:	May 2017
Revision Number:	0
Comments:	N/A
Status:	FINAL
Distribution:	MCD Construction Consultancy – electronic copy

Table of Contents

EXECUTIVE SUMMARY

A Coal Mining Risk Assessment was required by Barnsley Council under Clause 11 of the National Policy Planning Framework. This report is required to support the planning application of the site.

In order to support a planning application for the subject site, ***MCD Construction Consultancy Ltd*** commissioned ***Demeter Environmental Ltd*** to undertake a Coal Mining Risk Assessment at the Kings Head, Darton Lane, Mapplewell, Barnsley S75 6AP, to support the planning application for the erection of four dwellings.

The project has been carried out in accordance with the guidance provided by the Department of Energy and Climate Change.

The project has been carried out within the existing legislative framework, which is outlined in Appendix B.

It should be noted that the table below only offers a brief summary of the information presented in this report and is for briefing purposes only. Reference should be made to the main report for detailed analysis undertaken.

Table 1: Executive Summary

	SUBJECT	DATA
SITE INFORMATION AND SETTING	Client	MCD Construction Consultancy Ltd
	Site	Kings Head Public House
	Site location	Darton Lane, Mapplewell, Barnsley S75 6AP
	Proposed development	The erection of four dwellings.
	Planning Reference	N/A
	Grid Reference	432681E, 410113N
	Current Land Use	Grassed area and storage building.
CONCEPTUAL SITE MODEL	History	Initially (1850-1854) the site appeared to comprise of open land, by 1890 a building was present on the southern boundary. By 1960 a second building was present on the north western area and the site appeared to form part of the grounds of a public house. By 1981 the building on the north western area had been demolished.
	Geology	No drift deposits are recorded to be present on the site. The solid geology indicates the site is on a boundary between Kent's Rock (sandstone) of the Duckmantian Sub-age and Pennine Middle Coal Measures Formation (sandstone) of the Westphalian epoch. An inferred coal seam outcrops 1m south west of the site. Based on the geological map the Kent's Thin Coal outcrops on the southern boundary of the site, and based on the local coal outcrops the dip is to the north east (under the site). The Kent's thin coal seam is between 0.0m and 1.9m thick.
	Coal	The Kent's Thin Coal seam (KN) outcrops on the southern boundary of the site, the Kent's Thick seam (KK) outcrops approximately 100m south west of the site and is approximately 14m below the Kent's thin coal seam. The depth of the Kent's Thick Seam is given as 0.8m thick Based on the map the seams dip to the north east under the site, the Kent's Thick seam is anticipated to be approximately 8mbgl.
	Site Investigation	N/A
Proposed Further Works		Given that there is the potential for a minimum of two shallow coal seams to be present under the site it is proposed that an intrusive investigation is undertaken to assess the risks. It is proposed that three rotary open boreholes are to be sunk across the site to a depth of 30mbgl to determine if any coal seams are present. If coal is encountered at depths of less than 10m, trial trenches will be excavated to determine if any bell puts are present.
This sheet is intended as a summary of the report; it does not provide a definitive analysis.		

1 INTRODUCTION

1.1 Coal Mining Risk Assessment Terms of Reference

1.1.1 This report presents the results of a Coal Mining Risk Assessment (CMRA) carried within the grounds of **the** Kings Head, Darton Lane, Mapplewell, Barnsley S75 6AP, performed for ***MCD Construction Consultancy Ltd***. This report was written in May 2017 and should be read in the light of any subsequent changes in legislation, statutory requirements or industry practices.

1.1.2 The works were carried out in accordance with the standard terms of contract of ***Demeter Environmental Ltd***.

1.1.3 This report has been prepared in accordance to the Demeter Environmental Limited Quality Management System.

1.2 Aims and Objectives of Coal Mining Risk Assessment

1.2.1 The primary objective of the CMRA was to assess whether the site has the potential to be affected by underground mining.

1.2.2 This study includes a review of the available geological information in order to establish the likely ground conditions at the site. The review is based on the following information:

- Review of the Coal Authority Mining Report for the site;
- Review of data available from the BGS;
- Review of data from previous site investigation reports;
- Identification of likely ground conditions at the site based on the data obtained;

1.2.3 The findings and opinions provided in this document are made in good faith and are based on data provided by third parties (Groundsure, Environment Agency, The Coal Authority, and Regulatory Bodies) and the report should be read in conjunction with the limitations on the document control form.

1.3 Scope of Coal Mining Risk Assessment

1.3.1 The objectives of the coal mining risk assessment is to:

1. Present a desk based review of all available information within this report on the coal mining issues which are relevant to the site;
2. Use the information obtained to identify and assess the risks to the proposed development from coal mining legacy, including cumulative impact issues;

3. Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development;

4. Demonstrate to the Local Planning Authority that the application is, or can be made safe and stable to meet the requirements of the National Planning Policy Framework and the requirements of the Coal Authority in respect of their determination of planning application consultations;

5. Minimise the risks and effects of land instability on properties, infra structure and the public;

6. Help to ensure that various types of development should not be placed in unstable locations without appropriate precautions;

7. Bring unstable land, wherever possible back into productive use; and

8. Assist in safeguarding public and private investment by a proper appreciation of site conditions and necessary precautionary measures.

1.3.2 The scheme has been designed taking into account the findings in the Coal Authority Report and this risk assessment as well as the requirements of the Coal Authority and the current National Planning Policy Guidance.

1.3.3 This report has been prepared in general accordance with the Coal Mining Risk Assessment Model Report Template and intends to demonstrate to the Local Planning Authority and the Coal Authority that the site is, or can be, made safe and stable, and to meet the requirements of the National Policy Planning Framework (NPPF).

1.4 Limitations of Data

1.4.1 It should be noted that it did not become a legal requirement to deposit coal mining abandonment plans until the 1870's and that this requirement was not rigorously enforced for some time after. Many shallow coal seams were worked prior to the introduction of first edition Ordnance Survey Maps and information on these workings is often not available. Therefore if coal seams were accessible then invariably they could have been worked by formal or informal means.

1.4.2 It is also possible that if unrecorded workings are present then unrecorded mine entries may be present.

1.5 Proposed Development

1.5.1 It is proposed that four dwellings are erected on the site. The proposed site development plan is shown on MCD Construction Consultancy Drawing 343-02 in Appendix G.

1.6 Principal Sources of Information

1.6.1 Documents that were available or have been obtained for reference or obtaining data are given in Appendix A.

2 SITE CONTEXT

2.1 Site Location

2.1.1 The site is located off Barnsley Road, the approximate grid reference is 432681E, 410113N, as shown on Drawing 1 and Plate 2 in Appendix G.

2.1.2 The site is located within the administrative jurisdiction of Barnsley Council.

2.2 Site Description & Site Reconnaissance Visit

2.2.1 A site walkover was undertaken in April 2017 and no observations relating to coal were recorded.

3 SITE HISTORY

3.1 Historical O.S. Maps

3.1.1 The historical usage of both the site and the surrounds has been researched by reference to historical maps, street plans, street directories, historical aerial photographs and anecdotal evidence. The historical O.S. maps are presented in the desk study report (reference 17-03-11).

3.1.2 A colliery was identified on the 1890 map approximately 500m south east of the site, an old coal pit was identified on the 1893 a map approximately 270m north east.

3.2 Previous Reports

3.2.1 Demeter Environmental Limited has no knowledge nor has received any reports relating to the site or the surrounding area.

4 ENVIRONMENTAL SETTING

4.1 Published Geology – 1:50,000 Geological Maps

4.1.1 The documented geology has been ascertained by the examination of British Geological Survey 1:50,000 Sheet 87 (Barnsley) and the appropriate geological memoir is summarised hereunder.

4.1.2 No drift deposits are recorded to be present on the site.

4.1.3 The solid geology indicates the site is on a boundary between Kent's Rock (sandstone) of the Duckmantian Sub-age and Pennine Middle Coal Measures Formation (sandstone) of the Westphalian epoch. An inferred coal seam outcrops 1m south west of the site.

4.1.4 Based on the geological map the Kent's Thin Coal outcrops on the southern boundary of the site, and based on the local coal outcrops the dip is to the north east (under the site).

4.1.5 The Kent's thin coal seam is between 0.0m and 1.9m thick.

4.2 Published Geology – 1:10,000 Geological Maps

4.2.1 The Kent's Thin Coal seam (KN) outcrops on the southern boundary of the site, the Kent's Thick seam (KK) outcrops approximately 100m south west of the site and is approximately 14m below the Kent's thin coal seam.

4.2.2 The depth of the Kent's Thick Seam is given as 0.8m thick

4.2.3 Based on the map the seams dip to the north east under the site, the Kent's Thick seam is anticipated to be approximately 8mbgl.

4.3 Summary of Authority Residential/Non-Residential Coal Authority Mining Report

4.3.1 A residential Coal Authority report was procured for the site (presented in Appendix K), which indicates that the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity.

4.3.2 There have also been two claims within 50m of the site.

5 COAL MINING RISK ASSESSMENT (CMRA)

5.1 Coal Mining Referral Area Plans

5.1.1 In order to determine if a Coal Mining Risk Assessment is required the Coal Mining Referral Area map for Barnsley Council has been reviewed (14th May 2017), the information is presented hereunder:

Table 2: Summary of Information From Coal Mining Referral Area For Barnsley Council

Question	Discussion	Yes / No
1) Is the site within a Coal Mining Reporting (Standing Advice) Area?	The Coal Mining Reporting Area, also known as CON29M Coal and Brine Consultation Areas, is the known extent of coal mining activity and is used to determine whether a coal mining report is required for property transactions and the conveyance process. This area does not represent the full extent of geological coal reserves and resources.	Yes
2) Is the site within a 'Development High Risk' (Referral) Area?	The Development High Risk Area is the part of the coal mining reporting area, which contains one or more recorded coal mining related features which have the potential for instability or a degree of risk to the surface from the legacy of coal mining operations. The combination of features includes mine entries; shallow coal workings (recorded and probable); recorded coal mining related hazards; recorded mine gas sites; fissures and breaklines and previous surface mining sites. New development in this defined area needs to demonstrate that the development will be safe and stable taking full account of former coal mining activities. This area was formally known as the Development Referral Area.	Yes

5.1.2 The Coal Mining Referral map is presented in Appendix C.

5.1.3 Based on the above a CMRA will be required by the Coal Authority and Barnsley Council as the site is within a referral area.

5.2 Site Specific Coal Mining Risk Plan

5.2.1 In order to determine what the potential risks are in relation to coal mining for the site, the coal mining risk plan for Barnsley Council was reviewed on the 14th May 2017, the information is presented below:

Table 3: Summary of Information From Site Specific Mining Risk Plan For Barnsley Council

Question	Discussion	Yes / No
Is the subject site within the zone of influence of any mine entries?	Mine entries indicate the entrance into a mine working, for which there are two types: shafts and adits. Mine shafts are vertical or near vertical entrances to a mine whereas adits are a walkable entrance to a mine as shown on plans held by the Coal Authority. Mine entry positions are taken from a variety of plan sources, which vary in age, scale, accuracy and condition. These factors determine the accuracy of the mine entry position derived. A Mine Entry with Potential Zone of Influence is the area of the ground that might be affected if subsidence of the mine entry occurs.	No
Are there any fissures within close proximity to the subject site?	Fissures and breaklines are types of geological disturbances which are lines of weaknesses at the surface which may have been affected by coal mining	No
Are there any mine gas sites in close proximity to the subject site?	A mine gas site is a site or property that has either been subject to investigation or remedial works by the Coal Authority to deal with an actual or potential mine gas occurrence.	No
Are there any records of past surface hazards in close proximity to the subject site?	A Past Surface Hazard is a site or property that has either been subject to investigation or remedial works by the Coal Authority under its Emergency Hazard Call-Out Procedures.	No
Are there any past or current surface mining in close proximity to the subject site?	Surface Mining Areas denote an area of coal extracted by surface excavations in the past or are being excavated currently, these sites do not necessarily reflect the extent of the excavation. Coal resources may still be available within these areas due to the inefficiencies of some historic mining techniques. These areas are often referred to as "opencast mining".	No
Are there any past shallow coal mine working in close proximity to the subject site?	Past shallow coal mine workings are derived from the Coal Authority's records of underground coal mine workings. This dataset has been created by extracting all those underground workings, or parts thereof, whose depth is 30 metres or less from the surface. Shallow workings do not have sufficient overlying strata therefore any movement has the potential to reach the surface and cause damage; approximately 50% of the accepted surface hazards are related to shallow workings, both recorded and unrecorded.	No
Is the subject site in an area/in close proximity to an area where there are probable shallow coal mine workings	Probable shallow coal mine workings contain locations and estimated extents of probable shallow underground workings for which no recorded plan exists, but where it is likely that workable coal at shallow depths has been mined before records were kept. The data has been estimated from available mining records by qualified mining surveyors.	Yes
If the subject site in an area where there are coal outcrops?	Coal Outcrops illustrate a location where a workable coal seam is present at or close to the surface.	Possibly

5.2.2 The Site Specific Coal Mining Plan is presented in Appendix C.

5.3 Surface Coal Ming Resource Plan

5.3.1 The surface coal mining resource plan for Barnsley Council was reviewed on the 14th May 2017, and the site is not in an area of surface mining operations.

5.3.2 The surface coal mining resource plan is presented in Appendix C.

5.4 Coal Authority Mining Report

5.4.1 As part of this risk assessment a Coal Authority Mining report has been procured, the report is presented in Appendix D and is summarised below:

5.4.2 The hazards associated with former mining activities, and associated hazards are summarised hereunder:

Table 4: Summary of Coal Authority Report

Information From Coal Authority	Information	Is risk present?
Past Underground Coal Mining	The property is in a surface area that could be affected by underground mining in 8 seams of coal at 80m to 390m depth, and last worked in 1982. Any movement in the ground due to coal mining activity should have stopped. In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report..	YES At depths greater than 30m pillar failure is rare as the imposed load is small compared to the overburden load and roof stopping rarely reaches the surface to form crown holes (Foundations of Engineering Geology 2nd edition Tony Waltham) Crown holes are also rare where the depth of the mine is greater than 10 times the extracted seam thickness)
Present Underground Coal Mining	The property is not in the likely zone of influence of any present underground coal workings.	No
Future Underground Coal Mining	The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods. The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods. The property is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future. No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.	No
Mine Entries	There are no known coal mine entries within, or within 20 metres of, the boundary of the property.	No
Coal Mining Geology	The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.	No
Past Opencast Coal Mining	The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.	No
Present Opencast Coal Mining	The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.	No
Future Opencast Coal Mining	The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods. The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.	No
Coal Mining Subsidence	There are 2 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot. There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.	Possibly
Mine Gas	There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.	No
Hazards Relating to Coal Mining	The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.	No

5.5 Data From Historical O.S. Maps

5.5.1 No evidence of coal mining was observed within 1000m of the site on the historical O.S. maps.

5.6 Hazards and Risks Associated With Former Mining Activities

5.6.1 The hazards associated with former mining activities, and associated hazards are summarised hereunder:

Table 5: Summary of Risks Associated With Former Mining Areas and Associated Hazards

Risk	Hazard	Consequence	Has Risk Been Identified?
Surface coal workings	Collapse of workings beneath buildings causing sudden loss of bearing to the structure (Consequence of 'Mild'). Collapse of the workings surrounding the buildings causing disruption to the infrastructure (Consequence of 'Minor'). Failure of unrecorded mine entries, areas of previously collapsed ground that have migrated to the surface beneath the building causing loss of bearing. Similar conditions may exist where coal may have been worked by primitive surface extraction (bell pits etc.) extraction at the crop of the seam (Consequence of 'Mild'). Failure of unrecorded mine entries, areas of previously collapsed ground or backfilled surface workings adjacent to the buildings causing disruption to the infrastructure, ad depending on the location, a loss of bearing to the structure (Consequence of 'Minor').	Mild/Minor – affect on building fabric Severe – acute risk to human health	Yes
Shallow coal mine workings		Mild/Minor – affect on building fabric Severe – acute risk to human health	Yes
Mine entries (shafts and adits)		Mild – affect on building fabric Severe – acute risk to human health	No
Mine entries (shafts and adits)	Entry	Severe – acute risk to human health	No
Gas emissions from coal mines including methane and carbon dioxide	Explosion / Asphyxiation	Mild – affect on building fabric Severe – acute risk to human health	No
Spontaneous combustion or ignition of coal which may lead to the production of carbon monoxide	Migration of mine gases from old mine workings and shafts to the surface results in explosion or the build-up of asphyxiating gases in confined areas. The effects can potentially cause serious structural damage to a building and loss of life. (Consequence of 'Mild' for buildings and 'Severe' for end users).	Mild – affect on building fabric Severe – acute risk to human health	No
Transmission of gases into adjacent properties from underground sources through ground fractures		Mild – affect on building fabric Severe – acute risk to human health	No
Coal mining subsidence	Consolidation of the workings and the overlying ground either as a result of self weight consolidation or foundation loading beneath the build area resulting in settlement damage to the structure (Consequence of 'Mild'). Consolidation of the workings and the overlying ground as a result of self weight consolidation adjacent to the buildings causing disruption to the infrastructure (Consequence of 'Minor').	Minor - affect on building fabric	No

6 THE COAL AUTHORITY PERMISSIONS

6.1.1 Prior written permission from The Coal Authority is required for intrusive activities that will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). Further information on The Coal Authority's permissions process can be found at: http://www.coal.gov.uk/services/permissions/index.cfm. Permissions have not yet been sought, but will need to be prior to any intrusive investigation.

7 PROPOSALS FOR FURTHER WORKS

7.1.1 Given that there is the potential for a minimum of two shallow coal seams to be present under the site it is proposed that an intrusive investigation is undertaken to assess the risks.

7.1.2 It is proposed that three rotary open boreholes are to be sunk across the site to a depth of 30mbgl to determine if any coal seams are present.

7.1.3 If coal is encountered at depths of less than 10m, trial trenches will be excavated to determine if any bell puts are present.

APPENDIX A: REFERENCES

The following documents were available or have been obtained for reference or obtaining data:

Groundsure Report			
BGS Borehole Record Viewer			
The Environmental Protection Act	1990		
The Contaminated Land (Wales) Regulations	2006		
The Contaminated Land (Scotland) Regulations	2000		
The Environment Act	1995		
The Radioactive Contaminated Land (Modifications of Enactments) (England) Regulations	2006		
The Radioactive Contaminated Land (Modifications of Enactments) (Wales) Regulations	2006		
The Radioactive Contaminated Land (Scotland) Regulations	2007		
The Water Resources Act	1991		
The Water Act	2003		
The Water Environment and Water Services (Scotland) Act	2003		
The Water (Northern Ireland) Order	1999		
The Wildlife and Country Act	1981		
The Conservation (Natural Habitats, etc.) Regulations	1994		
The Town and Country Planning Act	1990		
The Town and Country Planning (Scotland) Act	1997		
The Building Control Act	1990		
The Construction Design and Maintenance (CDM) Regulations	2007		
The Control of Substances Hazardous to Health (COSHH) Regulations	2002		
The Factories Act	1961		
The Offices, Shops and Railway Premises Act	1963		
The Health and Safety at Work, etc. Act	1974		
The Pollution Prevention and Control Act	1999		
The Control of Pollution Act 1994 as amended	1994		
The Environmental Damage (Prevention and Remediation) Regulations	2009		
The Environmental Damage (Prevention and Remediation) (Wales) Regulations	2009		
The Environmental Liability (Scotland)	2009		
The Environmental Protection (Duty of Care) Regulations	1991		
The Environmental Permitting (England and Wales) Regulations	2007		
The Pollution Prevention and Control (Scotland) regulations	2000		
Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)	2013	BS 8576:2013	2013
Good practice on the testing and verification of protection systems for buildings against hazardous ground gases	CIRIA	C735	August 2014
Investigation of Potentially Contaminated Sites	BSI	BS10175:2011+A:2013	2013
Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)	BSI	BS 8576:2013	2013
Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance	DEFRA	-	April 2012
Environmental Protection Act 1990: Part 2A – Contaminated Land	DEFRA	Circular 1/2006	September 2006 (withdrawn April 2012)
National Planning Policy Framework	Communities and Local Government	-	27th March 2012
Guiding Principles for Land Contamination	Environment Agency	GPLC1 / GPLC2 / GPLC3	March 2010
Planning and Pollution Control	ODPM	PPS23	November 2004 (withdrawn March 2012)
Circular 22/87: Development of Contaminated Land	Welsh Government	22/87	August 1987
Planning Advice Note PAN 33	Scottish Government	PAN 33	October 2000
Contaminated Land Statutory Guidance for Wales	Welsh Government	WG15450	2012
Explanatory Memorandum to the Contaminated Land	Welsh Government	-	February

(Wales) (Amendment) Regulations 2012 and the draft Contaminated Land Statutory Guidance 2012			2012
NHBC Standards	NHBC	-	2014
Code of Practice for Ground Investigations	BSI	BS5930:2015	July 2015
Technical aspects of site investigations in relation to land contamination	Environment Agency	EA P5-065/TR:2000	2000
Contaminated Land Risk Assessment: A Guide to Good Practice	CIRIA	C552	2001
Secondary model for the development of appropriate soil sampling strategies for contaminated land	Environment Agency	EA P5-066/TR:2000	2000
Remedial Targets Methodology - Hydrogeological Risk assessment for Land Contamination	Environment Agency		2006
The physical properties of the minor aquifers in England and Wales	BGS		2000
A framework for assessing the impact of contaminated land on groundwater and surface water	Department of the Environment	DOE CLR 1	1994
Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environmental Protection Act 1990.	Environment Agency		May 2002
Guidance on Preliminary site inspection of contaminated land	Department of the Environment	DOE CLR 2	1994
Documentary search on industrial sites	Department of the Environment	DOE CLR 3	1994
Sampling strategies for contaminated land	Department of the Environment	DOE CLR 4	1994
Information systems for land contamination	Department of the Environment	DOE CLR 5	1994
Prioritisation + categorisation procedure for sites which may be contaminated	Department of the Environment	DOE CLR 6	1995
Model Procedures for the Management of Land Contamination	Environment Agency	CLEA CLR 11	September 2004
A quality approach for contaminated land consultancy	Department of the Environment	DOE CLR 12	1997
Human health toxicological assessment of contaminants in soil	Environment Agency	Science Report SC050021/SR2	January 2009
Updated technical background to the CLEA model	Environment Agency	Science Report SC050021/SR3	January 2009
A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA)	Environment Agency	SC050021/ Technical Review 1	2009
Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values	Environment Agency	Science Report SC050021/SR7	2008
The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soil	Environment Agency	Report P5-080/TR3	2005
Review of the Fate and Transport of Selected Contaminants in the Soil Environment	Environment Agency	Draft Technical Report P5-079/TR1	2003
Guidance on Comparing Soil Contamination Data with a Critical Concentration	CL:AIRE/ CIEH		May 2008
Various toxicology reports	Environment Agency / DEFRA	CLR TOX1-24	Various dates
Industry Profiles	DEFRA		Various dates
Radon: guidance on protective measures for new developments	BRE	BRE 211	November 2007
Contaminated Land management manual	LQM	LQM2000	2000
Assessing risks posed by hazardous ground gases to buildings (revised)	CIRIA	CIRIA C665	December 2007
Code of practice for the design of protective measures for methane and carbon dioxide ground gas for new buildings	BSI	BS 8485:2015	2015
Using Soil Guideline Values		Science Report SC050021/SGV Introduction	March 2009
Soil guideline values for inorganic arsenic	Environment Agency	SC050021/ arsenic SGV	May 2009
Soil guideline values for mercury	Environment Agency	SC050021/ mercury SGV	April 2009
Soil guideline values for selenium	Environment Agency	SC050021/ selenium SGV	April 2009
Soil guideline values for benzene	Environment Agency	SC050021/ benzene	April 2009

		SGV	
Soil guideline values for toluene	Environment Agency	SC050021/ toluene SGV	April 2009
Soil guideline values for ethylbenzene	Environment Agency	SC050021/ ethylbenzene SGV	April 2009
Soil guideline values for xylenes	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for inorganic arsenic	Environment Agency	SC050021	May 2009
Supplementary information for the derivation of for mercury	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for selenium	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for benzene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for toluene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for ethylbenzene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for xylenes	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Inorganic Arsenic	Environment Agency	SC050021/Tox 1	May 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Mercury	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Selenium	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Benzene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Toluene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Ethylbenzene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Xylenes	Environment Agency	SC050021	April 2009
Reclamation of Contaminated Land	Wiley		2004
Policy and Practice For The Protection of Groundwater	Environment Agency		1999
CIRIA Special Publication 102 - Remedial Treatment for Contaminated Land - Volume II: Decommissioning, Decontamination and Demolition	CIRIA	SP102	January 1995
Guidance on the Safe Development of Housing on Land affected by Contamination	Environment Agency	R&D Publication 66	2008
ProUCL User Guide and Technical Guide	USEPA	-	
Guidance on the assessment of and monitoring of natural attenuation of contaminants in groundwater	Environment Agency	R&D Publication 95	2000
The standard penetration test in insensitive clays and soft rocks	Proceedings of the European Symposium on Penetration Testing in the UK	-	1988
Protection of Workers and the General Public During Development of Contaminated Land	HSE	HSG66	September 1991
Trenching practice. 2nd edition	CIRIA	R97	2001
Desiccation in clay soils	BRE	412	February 1996
Methods of test for soils for civil engineering purposes	BSI	BS1377 (Parts 1 to 9)	1990
Eurocode 7: Geotechnical Design – Part 1: General Rules British	BSI	BS EN 1997-1	2004
Eurocode 7: Geotechnical Design – Part 2: Ground Investigation and Testing	BSI	BS EN 1997-2	2007
Geotechnical investigation and testing. Field testing. Electrical cone and piezocone penetration test	BSI	BS EN ISO 22476-1	2012
Geotechnical Investigation and Testing – Field Testing Part 2: Dynamic Probing	BSI	BS EN ISO 22476-2+A1	2011
Geotechnical Investigation and Testing – Field Testing Part 3: Standard Penetration Test	BSI	BS EN ISO 22476-3+A1	2011
Geotechnical investigation and testing. Field testing- Ménard pressuremeter test	BSI	BS EN ISO 22476-4	2012
Geotechnical investigation and testing. Field testing - Flexible dilatometer test	BSI	BS EN ISO 22476-5	2012
Geotechnical investigation and testing. Field testing - Borehole jack test	BSI	BS EN ISO 22476-7	2012
Geotechnical investigation and testing. Field testing – Flat dilatometer test	BSI	BS EN ISO 22476-11	2006

Geotechnical investigation and testing. Field testing - Mechanical cone penetration test (CPTM)	BSI	BS EN ISO 22476-12	2009
The standard penetration test (SPT): methods and use	CIRIA	R143	1995
Low-rise Buildings on Shrinkable Clay	BRE	BRE Digest 240 and 241	1993
Settlement of structures on clay soils	CIRIA	SP27	1983
Piled foundations in weak rock	CIRIA	R181	1999
Theoretical soil mechanics	Terazaghi	-	1943
Soils for civil engineering purposes	BSI	BS 1337	1990
Groundwater Control – Design and Practice	CIRIA	C515	2000
Trees in relation to design, demolition and construction. Recommendations	BSI	BS 5837	2012
Workmanship on Building Sites	BSI	BS 8000	Various
ICRCL 61/84 Notes on the fire hazards of contaminated land	ICRCL	61/84	1986
Soakaway Design	BRE	Digest 365	1991
Design guidance for road pavement foundations (draft HD 25) (Revision 1)	Highways Agency	Draft HD25	2006
Building Regulations Approved Documents	HM Government	Various	2013

APPENDIX B: DRAWINGS

Demeter Environmental Ltd
Liverpool Office:
Hanover House
Hanover Street
Liverpool
L1 3DZ

Tel: 0151 521 2539
Fax: 0151 909 3661

Brighton Office:
Gemini House
136-140 Old Shoreham Road
Brighton, East Sussex
BN3 7BD
Tel: 01273 741 727

Email: enquiries@demeter-environmental.co.uk

Drawing 1

Kings Head Public House

Scale: NTS

Site Location Plan

Demeter Environmental Ltd
Liverpool Office:
Hanover House
Hanover Street
Liverpool
L1 3DZ

Tel: 0151 521 2539
Fax: 0151 909 3661

Brighton Office:
Gemini House
136-140 Old Shoreham Road
Brighton, East Sussex
BN3 7BD

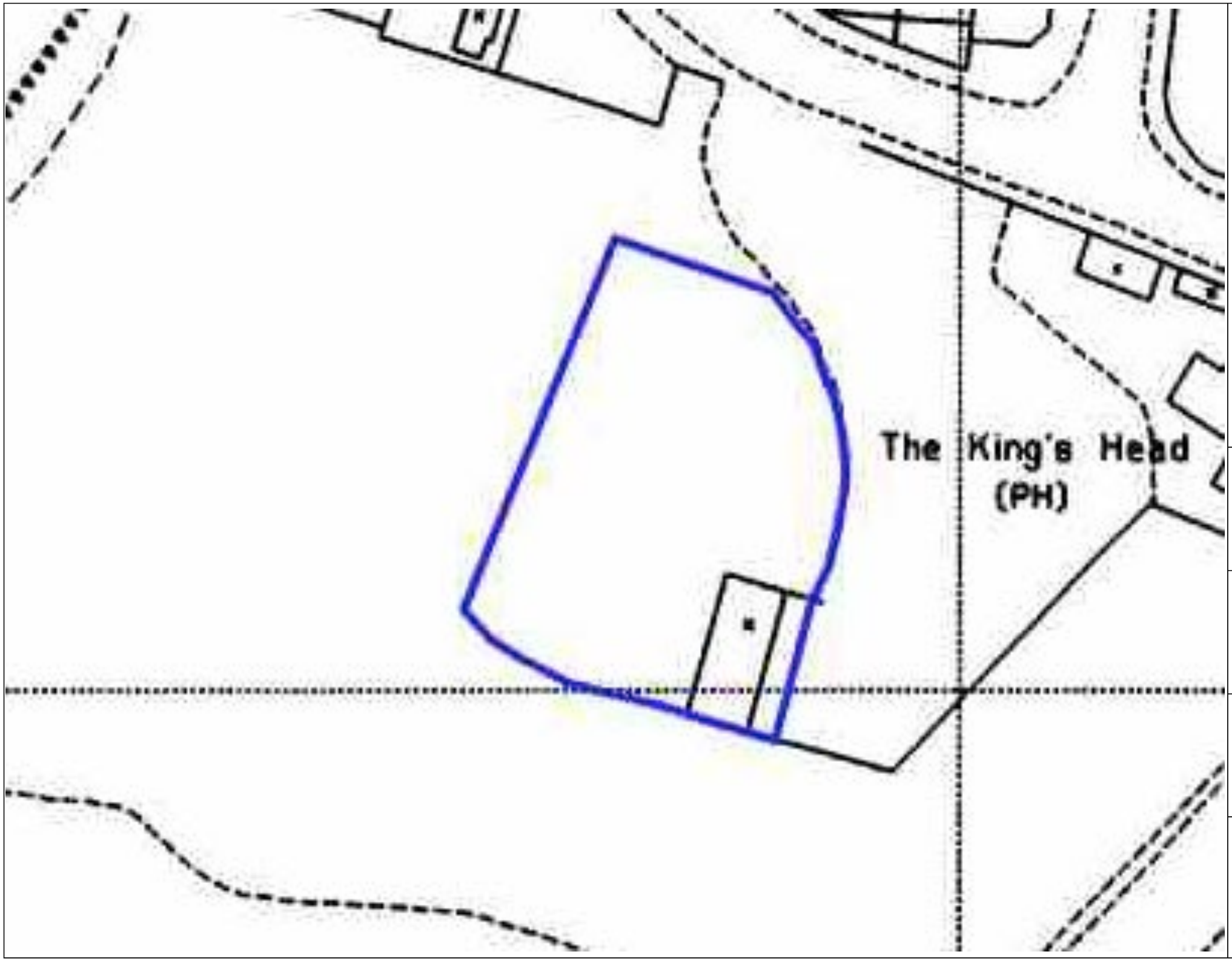
Email: enquiries@demeter-environmental.co.uk

Drawing 2

Kings Head Public House

Aerial Plate

Date Taken: 26th March 2012



Demeter Environmental Ltd
Liverpool Office:
Hanover House
Hanover Street
Liverpool
L1 3DZ

Tel: 0151 521 2539
Fax: 0151 909 3661

Brighton Office:
Gemini House
136-140 Old Shoreham Road
Brighton, East Sussex
BN3 7BD
Tel: 01273 741 727

Email: enquiries@demeter-environmental.co.uk

Drawing 3

Kings Head Public House

Scale: 1:250 at A3

Site Layout

FRONT ELEVATION	
	500mm high facing brick wall with buff stone caps, pillars to gateways, brick soldier course capped with steel rails total height 800mm
	1800mm high facing brick wall with brick soldier capping
	1800mm high dark brown treated timber fence panels with concrete posts
	900mm PPC steel rail and post fencing

NOTES:

MCD Construction Consultancy take no responsibility for any dimensions obtained by scaling from this drawing. If no dimension is shown the recipient must ascertain the dimension specifically from the Contract Administrator or by site measurement. Supplying this drawing in digital form is solely for convenience and no reliance may be placed on digital data. All data must be checked against hard copy. Dimensions must be checked on site. Any discrepancies must be reported to the Contract Administrator immediately. This drawing is copyright of MCD Construction Consultancy.

Client: Punch Taverns PLC

Pr	Preliminary		C	Contract	
F	Feasabilty		Cn	Construction	
P	Planning	■	As	As Built	
T	Tender		Other		

Project: The Kings Head, Mapplewell

Title: Proposed Street elevation

Drwg Scale: 0 5m 10m Scale 1:500 — A3

Drawing No: 343-02

Revision: .

Shady Oak, Marple
Rd. Stockport
SK2 5HF
07795 388610
07983 347252
www.mcdcc.co.uk
info@mcdcc.co.uk

MCD CONSTRUCTION CONSULTANCY

APPENDIX C: COAL AUTHORITY REPORT