## **ABBREVIATIONS and ACRONYMS USED**

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution
AC	x10 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID.  TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser.  Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser.  Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



# **Appendix D – Geo-technical Laboratory Test Results** (PENDING)



# Appendix E – Gas and Groundwater Level Monitoring Results



**GAS & GROUNDWATER MONITORING RECORD SHEET 1** 

NHS Property Services Ltd Former Clitheroe Hospital A094939 Client Project

Job Number

Visit No. 1	Date	10/02/17	Start	15.00	End	16.05	Ву	LD	AP Trend	Steady	Weather	Overcast, cold
Instruments used - G	A5000 with in	ternal flow	pod, Minira	e 2000, Oil/	Water Inte	erface Meter	r <b>.</b>		_			
Background (start)	CH₄	< 0.1	CO <sub>2</sub>	< 0.1	O <sub>2</sub>	21.8%	VOCs	< 0.1	AP	1015		
Background (end)	CH₄	< 0.1	CO <sub>2</sub>	< 0.1	02	21.0%	VOCs	<0.1	AP	1016		

Installation	С	H <sub>4</sub>	CC	O <sub>2</sub>	O <sub>2</sub>	СО	H <sub>2</sub> S	VOC	Flow	Rate	Atmospheric Pressure	Depth to Water	Depth to	Remarks
Tristaliation	Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol)	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (I/h)	Steady (I/h)	(mbar)	(mbgl)	Base (mbgl)	Remarks
WS101	<0.1	< 0.1	0.7	0.7	20.6	<1	<1	< 0.1	0.3	0.2	1015	1.20	3.50	-
WS102	< 0.1	< 0.1	2.1	2.1	20.1	<1	<1	< 0.1	-7.3	0.3	1015	1.60	3.00	-
WS103	< 0.1	< 0.1	0.3	0.3	21.2	1	<1	< 0.1	0.2	0.2	1015	3.36	3.50	-
WS104	< 0.1	< 0.1	1.6	1.6	20.1	<1	<1	< 0.1	0.3	0.3	1015	2.73	3.95	-
WS105	< 0.1	< 0.1	1.4	1.4	20.5	<1	<1	< 0.1	< 0.1	< 0.1	1015	Dry	2.50	-
WS106	< 0.1	< 0.1	0.6	0.4	20.9	3	<1	< 0.1	-1.6	0.3	1015	2.42	2.50	-
Maximum	< 0.1	< 0.1	2.1	2.1	-	3	<1	< 0.1	0.3	0.3	1015	-	-	-

Visit No. 2	Date	14/02/17	Start	16.00	End	16.50	Ву	LD	AP Trend	Rising	Weather	Clear, cold
Instruments used - G	A5000 with ir	ternal flow	pod, Minirae	e 2000, Oil/	Water Inte	erface Meter	r.		_			
Background (start)	CH₄	< 0.1	CO <sub>2</sub>	<0.1	O <sub>2</sub>	21.8%	VOCs	< 0.1	AP	1019		
Background (end)	CH₄	<0.1	CO <sub>2</sub>	<0.1	$O_2$	21.2%	VOCs	<0.1	AP	1020		

Installation	С	H <sub>4</sub>	CC	O <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	VOC	Flow	Rate	Atmospheric Pressure	Depth to Water	Depth to	Remarks
Installation	Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol)	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (I/h)	Steady (I/h)		(mbgl)	Base (mbgl)	Remarks
WS101	<0.1	< 0.1	0.9	0.8	20.4	<1	<1	<0.1	0.2	0.2	1020	1.22	3.50	-
WS102	<0.1	< 0.1	2.0	2.0	20.2	<1	<1	< 0.1	0.1	0.1	1020	1.61	3.00	-
WS103	<0.1	< 0.1	0.5	0.4	21.1	<1	<1	<0.1	0.1	0.1	1020	3.38	3.50	-
WS104	< 0.1	< 0.1	1.6	1.4	20.2	<1	<1	< 0.1	0.2	0.2	1020	2.75	3.95	-
WS105	< 0.1	< 0.1	1.4	1.4	20.5	<1	<1	< 0.1	0.1	< 0.1	1019	Dry	2.50	-
WS106	< 0.1	< 0.1	0.5	0.5	20.9	<1	<1	< 0.1	0.1	< 0.1	1019	2.45	2.50	-
Maximum	<0.1	< 0.1	2.0	2.0	-	<1	<1	< 0.1	0.2	0.2	1020	-	-	-

#### Notes:

Calibration gas standards = VOCs 100ppm

AP - Atmospheric Pressure Trend

Peak reading = maximum recorded level during a monitoring event.

Steady reading = level which remained constant after approximately 5 minutes.

LEL = Lower Explosive Limit

GSV = Gas Screening Value - the maximum percentage steady  $CH_4$  or  $CO_2$  multiplied by the gas flow rate.

GL - Ground Level

Atmospheric Pressure trend obtained from Met Office Website (http://www.metoffice.gov.uk/education/archive/uk/) and www.wunderground.com (History Data



# Appendix F – Radon Report



Sara Hegewald WYG 33 Sandstone Lane CW6 PHD

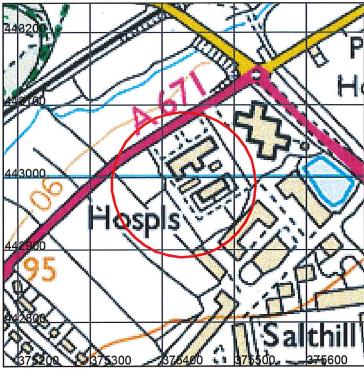
# **Radon Report: England and Wales**

Advisory report on the requirement for radon protective measures in new buildings, conversions and extensions to existing buildings. The report also indicates whether a site is located within a radon Affected Area

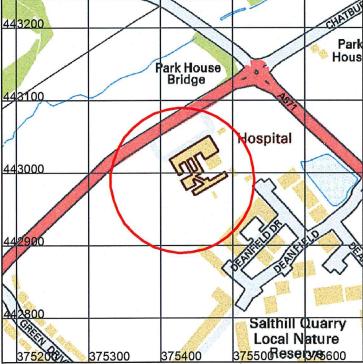
Report Id: GR\_215334/1

Client reference: SH A094939 Clitheroe

# **Search location**



This product includes mapping data licensed from Ordnance Survey. © Crown Copyright and/or database right 2017. Licence number 100021290 EUL Scale: 1:5 000 (1cm = 50 m)



Contains Ordnance Survey data © Crown Copyright and database right 2017 OS Street View: Scale: 1:5 000 (1cm = 50 m)

This report describes a site located at National Grid Reference 375430, 442990. Note that for sites of irregular shape, this point may lie outside the site boundary. Where the client has submitted a site plan the assessment will be based on the area given.

Search location indicated in red





# Radon Report: England and Wales

When extensions are made to existing buildings in high radon areas, or new buildings are constructed in these areas the Building Regulations for England, Wales and Scotland require that protective measures are taken against radon entering the building.

This report provides information on whether radon protective measures are required. Depending on the probability of buildings having high radon levels, the Regulations may require either:

- 1. No protective measures
- 2. Basic protective measures
- Full protective measures

This is an advisory report on the requirement for radon protective measures in new buildings, conversions and extensions. The report also indicates whether a site is located within a radon Affected Area

## Requirement for radon protective measures

The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2015 edition)*, which also provides guidance on what to do if the result indicates that protective measures are required.

# NO RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

More details of the protective measures required are available in *BR211 Radon:* Guidance on protective measures for new buildings (2015 Edition). Additional information and guidance is available from the Building Research Establishment website (http://www.bre.co.uk/radon/).

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.





#### **Radon Affected Area**

#### Is this property in a radon affected area - YES

The answer to the standard enquiry on house purchase known as **CON29 Standard Enquiry of Local Authority 3.13 Radon Gas: Location of the Property in a radon Affected Area is YES** this property is in a Radon Affected Area as defined by Public Health England (PHE).

The estimated probability of the property being above the Action Level for radon is: 1-3% (INTERMEDIATE PROBABILITY).

Public Health England (PHE) recommends a radon 'Action Level' of 200 becquerels per cubic metre of air for the annual average of the radon gas concentration in a home. Where 1% or more of homes are estimated to exceed the Action Level (i.e. are in an Intermediate or Higher probability radon area) the area should be regarded as a radon Affected Area.

This report informs you whether the property is in a radon Affected Area as defined by PHE and the percentage of homes that are estimated to be at or above the radon Action Level. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

PHE advises that radon gas should be measured in all properties within radon Affected Areas and that homes with radon levels above the Action Level (200 Bq m-3) should be remediated, and where achievable to below the Target Level of 100 Bq m-3. Householders with levels between the Target Level and Action Level should seriously consider reducing their radon level, especially if they are at greater risk, such as if they are current or ex smokers. Whether or not a home is in fact above or below the Action Level or Target Level can only be established by having the building tested. PHE provides a radon testing service which can be accessed at www.ukradon.org.

The information in this report provides an answer to one of the standard legal enquiries on house purchase in England and Wales, known as Law Society CON29 Enquiries of the Local Authority (2016); 3.14 Radon Gas: Do records indicate that the property is in a "Radon Affected Area" as identified by Public Health England. The data can also be used to advise house buyers and sellers in Scotland.

If you are buying a new build property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.





If you are buying a currently occupied property in a Radon Affected Area you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so whether remedial measures were installed, radon levels were retested, and the that the results of re-testing confirmed the effectiveness of the measures.

Further information on radon is available from PHE or www.ukradon.org.

Date: 26 January 2017 © NERC, 2017. All rights reserved.

Page: 5 of 8 BGS Report No: GR\_215334/1





#### What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used. Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m<sup>-3</sup>). The Government advises householders that, where the radon level exceeds the Action Level, measures should be taken to reduce the concentration.

## Radon in workplaces

The Ionising Radiation Regulations, 1999, require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293): Radon in the workplace. BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.ukwebsite: www.brebookshop.com





# **Contact Details**

# Keyworth Office

British Geological Survey Environmental Science Centre Nicker Hill Keyworth Nottingham NG12 5GG

Tel: 0115 9363143 Fax: 0115 9363276

Email: enquiries@bgs.ac.uk

# Wallingford Office

British Geological Survey Maclean Building Wallingford Oxford OX10 8BB

Tel: 01491 838800 Fax: 01491 692345

Email: hydroenq@bgs.ac.uk

## Edinburgh Office

British Geological Survey Lyell Centre Research Avenue South Edinburgh EH14 4AP

Tel: 0131 6671000

Email: enquiry@bgs.ac.uk





# **Terms and Conditions**

#### **General Terms & Conditions**

This Report is supplied in accordance with the GeoReports Terms & Conditions available on the BGS website at <a href="https://shop.bgs.ac.uk/georeports">https://shop.bgs.ac.uk/georeports</a> and also available from the BGS Central Enquiries Desk at the above address.

#### Important notes about this Report

- The data, information and related records supplied in this Report by BGS can only be indicative and should not
  be taken as a substitute for specialist interpretations, professional advice and/or detailed site investigations.
  You must seek professional advice before making technical interpretations on the basis of the materials
  provided.
- Geological observations and interpretations are made according to the prevailing understanding of the subject at
  the time. The quality of such observations and interpretations may be affected by the availability of new data, by
  subsequent advances in knowledge, improved methods of interpretation, and better access to sampling
  locations.
- Raw data may have been transcribed from analogue to digital format, or may have been acquired by means of
  automated measuring techniques. Although such processes are subjected to quality control to ensure reliability
  where possible, some raw data may have been processed without human intervention and may in consequence
  contain undetected errors.
- Detail, which is clearly defined and accurately depicted on large-scale maps, may be lost when small-scale maps are derived from them.
- Although samples and records are maintained with all reasonable care, there may be some deterioration in the long term.
- The most appropriate techniques for copying original records are used, but there may be some loss of detail and dimensional distortion when such records are copied.
- Data may be compiled from the disparate sources of information at BGS's disposal, including material donated to BGS by third parties, and may not originally have been subject to any verification or other quality control process.
- Data, information and related records, which have been donated to BGS, have been produced for a specific
  purpose, and that may affect the type and completeness of the data recorded and any interpretation. The
  nature and purpose of data collection, and the age of the resultant material may render it unsuitable for certain
  applications/uses. You must verify the suitability of the material for your intended usage.
- If a report or other output is produced for you on the basis of data you have provided to BGS, or your own data
  input into a BGS system, please do not rely on it as a source of information about other areas or geological
  features, as the report may omit important details.
- The topography shown on any map extracts is based on the latest OS mapping and is not necessarily the same
  as that used in the original compilation of the BGS geological map, and to which the geological linework
  available at that time was fitted.
- Note that for some sites, the latest available records may be quite historical in nature, and while every effort is
  made to place the analysis in a modern geological context, it is possible in some cases that the detailed geology
  at a site may differ from that described.

Copyright:

Copyright in materials derived from the British Geological Survey's work, is owned by the Natural Environment Research Council (NERC) and/ or the authority that commissioned the work. You may not copy or adapt this publication, or provide it to a third party, without first obtaining NERC's permission, but if you are a consultant purchasing this report solely for the purpose of providing advice to your own individual client you may incorporate it unaltered into your report to that client without further permission, provided you give a full acknowledgement of the source. Please contact the BGS Copyright Manager, British Geological Survey, Environmental Science Centre, Nicker Hill, Keyworth, Nottingham NG12 5GG. Telephone: 0115 936 3100.

This product includes mapping data licensed from the Ordnance Survey® with the permission of the Controller of Her Majesty's Stationery Office. © Crown Copyright 2017. All rights reserved. Licence number 100021290 EUL



Report issued by BGS Enquiry Service

Date: 26 January 2017 © NERC, 2017. All rights reserved. Page: 8 of 8

BGS Report No: GR\_215334/1

# Draft Factual and Interpretative Ground Investigation Report The Former Clitheroe Hospital



# **Appendix G – Tier 1 Screening Assessment**

			Sample Location	TP101A	TP102	TP102	TP104	TP105	TP106	WS101	WS102	WS103	WS104	WS105	WS106
			Type Date Sampled	Soil 01-Feb-17	Soil 01-Feb-17	Soil 01-Feb-17	Soil 01-Feb-17	Soil 01-Feb-17	Soil 01-Feb-17	Soil 02-Feb-17	Soil 02-Feb-17	Soil 02-Feb-17	Soil 02-Feb-17	0.2 02-Feb-17	0.2 02-Feb-17
Determinand Fraction of organic carbon (FOC)	Units	LOD <0.001	Depth (m bgl)	0.2	0.2	0.008	0.2	0.009	0.2	0.4	0.2	0.2	0.5	0.2	0.2
Asbestos ID		< 0.01	Presence <5 >9	NAD 8	NAD 7.8	8.18	NAD 7.91	8.16	0.033 NAD 7.85	NAD 8.1	0.064 NAD 7.88	0.031 NAD 7.96	7.96	8.01	NAD 8.59
Cyanide(free) Sulphate as SO4 (2:1 Ext) Natural Moisture Content	mg/kg g/l %	<0.5 <0.0015 <0.1	24	<0.5 0.0103 26.3	<0.5 0.0086 17	<0.5 0.0021 25.5	<0.5 0.0146 26.4	<0.5 0.0017 27.2	<0.5 <0.0015 38	<0.5 0.0279 30.1	<0.5 0.0206 48.1	<0.5 0.0184 34.7	<0.5 <0.0015 29.9	<0.5 0.0082 37.3	<0.5 0.0177 5.9
Arsenic	mg/kg	< 0.5	37	18.6	10.8	10.6	27.2	13.4	22.6	30.9	18.6	36.3	13.4	19.5	7.4
Cadmium Boron (water-soluble) Chromium Chromium VI	mg/kg mg/kg mg/kg	<0.1 <0.1 <0.5 <0.3	290 910	0.7 0.7 68.4	0.5 0.7 60.1	0.3 0.4 48.5	0.8 1 56.1	0.7 0.5 46.7	0.9 1.3 59.2	1.5 1.8 40.9	0.8 1.6 43.4	0.7 1.4 48	0.6 0.6 51.1	0.8 34.7	0.5 0.3 13.9
Chromium VI Copper Lead	mg/kg mg/kg mg/kg	<0.3 <1 <5	21 2400	<0.3 59 173	<0.3 23 92	<0.3 19 32	<0.3 49 409	<0.3 24 43	<0.3 40 181	<0.3 80 546	<0.3 47 250	<0.3 34 250	<0.3 25 48	<0.3 51 181	<0.3 34 440
Mercury	ma/ka	< 0.1	40 180	<0.1 33.7	<0.1 19.9	<0.1 35.3	<0.1 33.2	<0.1 29.5	<0.1 36.6	0.5 35.1	<0.1 38.5	<0.1 31.2	<0.1 39.7	0.1 37.1	<0.1 15.2
Nickel Selenium Zinc	mg/kg mg/kg mg/kg	<0.7 <1 <5	250 3700	2 188	<1 122	2 108	1 244	2 161	2 267	603	2 220	2 232	2 167	1 247	<1 70
Phenols(Mono)	mg/kg		380	<0.15	<0.15	< 0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene	mg/kg mg/kg mg/kg mg/kg	<0.05 <0.03 <0.04		<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 0.08 0.09	<0.05 0.1 0.15	<0.05 <0.03 <0.04	<0.05 <0.03 <0.04	<0.05 0.07 0.08	29.67 14.35 49.44
			5	0.22 0.17 0.19	0.26 0.24 0.28	<0.06 <0.04 <0.05	0.22 0.18 0.21	<0.06 <0.04 <0.05	0.13 0.13 0.14	0.73 0.83 0.98	0.56 0.51 0.59	0.34 0.36 0.44	0.12 0.08 0.09	0.73 0.89 1.04	111.31 116.55 136.61
Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(k)fluoranthene	mg/kg mg/kg mg/kg	<0.05		0.19 0.09 0.07 0.2	0.28 0.15 0.11 0.26	<0.05 <0.04 <0.02 <0.02	0.21 0.1 0.08 0.21	<0.05 <0.04 <0.02 0.03	0.14 0.09 0.06 0.12	0.5 0.38 0.78	0.59 0.27 0.23 0.55	0.44 0.23 0.17 0.37	<0.04 0.04 0.09	0.59 0.4 0.78	60.91 53.13 106.78
Chrysene Dibenzo(ah)anthracene Fluoranthene	mg/kg mg/kg mg/kg	<0.04 <0.02 <0.02 <0.04 <0.03 <0.04		0.2 <0.04 0.41	0.26 <0.04 0.44	<0.02 <0.04 <0.03 <0.04	0.21 <0.04 0.38	0.03 <0.04 0.06	0.12 <0.04 0.19	0.78 0.08	0.55 0.07 1.17	0.37 <0.04 0.65	0.09 <0.04 0.17 <0.04	0.78 0.12 1.28	106.78 17.26 252.71
Fluorene Indeno(123cd)pyrene	mg/kg mg/kg mg/kg			<0.04 0.11 <0.04	<0.04 0.18		<0.04 0.11	<0.04 <0.04	<0.04 0.11	<0.04 0.52	<0.04	<0.04 0.23	<0.04 <0.04 <0.04	<0.04 0.6 <0.04	17.87 70.34
Naphthalene Phenanthrene Pyrene	mg/kg mg/kg mg/kg	<0.04 <0.03 <0.03	13	<0.04 0.24 0.34	<0.04 0.14 0.39	<0.04 <0.03 <0.03	<0.04 0.15 0.33	<0.04 0.05	<0.04 0.05	<0.04 0.37 1.23	<0.04 0.51 0.95	<0.04 0.18 0.54	<0.04 0.04 0.14	<0.04 0.25 1.14	99.01 198.76
Pyrene PAH 16 Total  EPH (>C8-C10)	mg/kg	₹0.6		2	0.39 2.5	<0.03 <0.6	2	0.05 <0.6	0.17 1.2						
EPH (>C8-C10) EPH (>C10-C12) EPH (>C12-C16) EPH (>C16-C21)	mg/kg mg/kg mg/kg	<5 <10 <10 <10	380 660	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	<5 <10 <10	7 16 727
EPH (>C16-C21) EPH (>C21-C40) EPH (>C8-C40)	mg/kg mg/kg mg/kg	<10 <10 <30	930 1700	<10 50 50	30 187 217	<10 <10 <30	14 98 112	<10 <10 <30	<10 55 55	32 114 146	<10 100 100	<10 47 47	<10 <10 <30	18 147 165	3891 9577 14218
MTBE	μ <sub>0</sub> /k <sub>0</sub>	<2					<2		-	<6					<6
Benzene Toluene	μο/kg μο/kg	<3 <3	870 660000		-	:	<3 <3 <3			<5 5 <3	:	-		-:	<5 6 <3
Ethylbenzene p/m-Xylene o-Xylene	140/kg 140/kg 140/kg	<3 <5 <3	310000 330000				<3 <5 <3			<3 <4 <4		E			<3 6 4
TPH CWG - Allohatics >C5-C6		<0.1	150				<0.1			<1.0					<1.0
>C6-C8	mg/kg mg/kg mg/kg	< 0.1	530 150	Ė			<0.1 <0.1	Ė		<1.0		Ė	Ė		<1.0 <1.0
>C8-C10 >C10-C12 >C12-C16 >C16-C35	mg/kg mg/kg mg/kg	<0.1 <0.2 <4 <14	770 4400 110000				<0.2 <4			<0.2 <4 <14					<0.2 38 550
>C16-C35 Total Aliphatics C5-C35 TPH - Aromatics	mg/kg mg/kg	<14 <19	110000	-			<14 <19	-	-	<19		-	-		588
>C5-EC7 >EC7-EC8 >EC8-EC10	mg/kg mg/kg mg/kg	<0.1 <0.1 <0.1	0.87 660 190	= =	==	==	<0.1 <0.1 <0.1	= =	==	<1.0 <1.0 <1.0	==	==	= =	==	<1.0 <1.0 <1.0
>EC10-EC12 >EC12-EC16	mg/kg mg/kg	<0.2 <4	380 660	:	- :	:	<0.1 <0.2 <4	:	- :	<1.0 <0.2 <4 12	-	-	:	:	<0.2 100 1214
>EC16-EC21 >EC21-EC35 Total Aromatics C5-C35	mg/kg mg/kg	<7 <7 <19	930 1700 1700				<7 <7 <19			65					4224
Total Aliphatics & Aromatics (C5-35) WHO 12 Congeners	mg/kg	<38	1900	•		•	<19 <38	•	•	77	•		•		5538 6126
PCB 77 PCB 81	μο/kg μο/kg	<5 <5		-:-	-	-	<5 <5	-:-		<5 <5	- :	-	-:-	- :	<25 <25
PCB 105 PCB 114 PCB 118	pe/ke	<5 <5 <5		- :		- :	- 45 - 45	- :	-:	<5 <5 <5		-	- :		<25 <25 <25
PCB 118 PCB 123 PCB 126	µg/kg µg/kg µg/kg	<5 <5 <5		- :	- :	- :	<5 <5 <5	- :	- :	<5 <5	- :	- :	- :	- :	<25
PCB 156 PCB 157	pig/kg	<5 <5		- :			<5 <5	- :		<5 <5			- :		<25 <25 <25
PCB 167 PCB 169	140/kg 140/kg	<5 <5			-	:	<5 <5			<5 <5	:				<25 <25
PCB 189 Total 12 PCBs	µg/kg µg/kg	<5 <60		- :	- :	- :	<5 <60	- :	- :	<5 <60	- :	-	- :	- :	<25 <300
SVOCs Phenois															
2-Chlorophenol 2-Methylphenol 2-Nitrophenol	µg/kg µg/kg	<10 <10 <10		- :			<10 <10 <10	- :		<10 <10 <10			- :		<100 <100 <100
2,4-Dichlorophenol == 2,4-Dimethylphenol	μο/kg μο/kg	<10 <10	97000				<10 <10			<10 <10					<100 441
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	pig/kg	<10 <10		- :	- :	- :	<10 <10	- :		<10 <10	- :	- :	- :	- :	<100 <100
4-Chloro-3-methylphenol 4-Methylphenol 4-Nitrophenol	140/kg 140/kg 140/kg	<10 <10 <10	400000	- :			<10 <10 <10	- :	-	<10 <10 <10			- :		<100 1150 <100
Pentachlorophenol Phenol <sup>188</sup>	µg/kg µg/kg µg/kg	<10 <10	380000			-	<10 <10			<10 <10	- :				<100 527
PAHs 2-Chloronaphthalene ** 2-Methylnaphthalene **	μο/kg μο/kg	<10 <10		-:-	-	- :	<10 <10	-:-	-	<10 <10	- :	-	-:-	-:-	<100 1960
Pritnalates Bis(2-ethylhexyl) phthalate	pa/ka	<100					<100			<100					<1000
Butylbenzyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate	μο/kg μο/kg μο/kg	<100 <100 <100		- :	- :	- :	<100 <100 <100	- :	- :	<100 <100 <100	- :	- :	- :	- :	<1000 <1000 <1000
Diethyl phthalate Dimethyl phthalate Other SVOCs	140/kg 140/kg	<100 <100 <100		- :			<100 <100 <100	- :		<100 <100			- :		<1000 <1000 <1000
Other SVOCs 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene **	µg/kg	<10 <10					<10 <10			<10 <10					<100 <100
1,3-Dichlorobenzene 1,4-Dichlorobenzene	μο/kg μο/kg μο/kg	<10 <10					<10 <10			<10 <10					<100 <100 <100
2-Nitroaniline 2,4-Dinitrotoluene	pig/kg pig/kg	<10 <10				:	<10 <10		-	<10 <10	- :	- :		-	<100 <100
2,6-Dinitrotoluene 3-Nitroaniline 4-Bromophenylphenylether #	μο/kg μο/kg	<10 <10 <10				- :	<10 <10 <10		- 1	<10 <10 <10	- :			- :	<100 <100 <100
4-Chloroaniline 4-Chlorophenylphenylether 4-Nitroaniline	μο/kg μο/kg μο/kg	<10 <10		- :		-	<10 <10	- :	-	<10	-		- :		<100
4-Nitroaniline Azobenzene	μο/kg μο/kg	<10 <10				- :	<10 <10			<10 <10					<100 <100 <100
Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Carbazole	μο/kg μο/kg μο/kg	<10 <10 <10		- :			<10 <10 <10	- :	-	<10 <10 25			- :		<100 <100 5199
Dibenzofuran **  Hexachlorobenzene  Hexachlorobutadiene **	140/kg	<10 <10 <10 <10		- :	-:-	-:-	<10	- :	- :	<10 <10 <10	-:-	-:-	- :	-:-	14473 <100 <100
Hexachlorocyclopentadiene	po/kg po/kg po/kg	<10		-:-	Ξ	Ė	<10 <10 <10	-:-	-:-	<10		-:-	-:-	- : -	<100
Hexachloroethane Isophorone <sup>su</sup> N-nitrosodi-n-propylamine <sup>su</sup>	µg/kg	<10 <10 <10		- :	-	÷	<10 <10 <10	- :	-	<10 <10 <10	÷	-	- :	-	<100 <100 <100
Nitrobenzene ** VOCs	pg/kg pg/kg	<10		-	-		<10	-	-	<10	:	:	- :	:	<100
Dichlorodifluoromethane Methyl Tertiary Butyl Ether* Chloromethane*	10/kg 10/kg 10/kg	<2 <2 <3 <2		- :	÷	÷	<2 <2 <3	- :	-	<2 <6 <3 <2	Ė		- :	-	<2 <6 <3 <2
	po/kg po/kg	<1		:	-	÷	<3 <2 <1	:	-	<1	:	:	:	-	<1
Bromomethane Chloroethane ' Trichlorofluoromethane ' 1.1-Dichloroethene (1.1 DCF) '	149/kg 149/kg	<2 <2 <6		- :	-		<2 <2 <6	- :	-	<6 <3 <6			- :	-	<6 <3 <6
I,1-Dichloroethene (1,1 DCE)* Dichloromethane (DCM)* trans-1-2-Dichloroethene*	140/kg 140/kg 140/kg	<30 <3	1700				52 <3			53 <3		E			42 <3
cis-1-2-Dichloroethene*	pp/kg pp/kg	<3 <3			-		<3 <3		-	<6 <7				-	<6 <7
2,2-Dichloropropane Bromochloromethane * Chloroform *	μο/kg μο/kg μο/kg	<4 <3 <3		- :	-	÷	<4 <3 <3	- :	-	<4 <4 <5	-		- :	-	<4 <4 <5
1,1,1-Trichloroethane* 1,1-Dichloropropene* Carbon tetrachloride*	Up/kg	<3 <3		- :	- :	:	<3 <3	- :		<5 <3	:	- :	- :	:	<5 <3
1,2-Dichloroethane'	140/kg 140/kg 140/kg	<4 <4 <3			Ξ	=	<4 <4 <3		-	<4 <5 <5	==	Ξ		==	<4 <5
Trichloroethene (TCE) ' 1,2-Dichloropropane '	pig/kg pig/kg	<3 <6					<3 <6			<5 <4					<5 <5 <4
Dibromomethane ' Bromodichloromethane ' cls-1-3-Dichloropropene	µg/kg µg/kg	<3 <3					<3 <3			<4 <4 <4					<4 <4 <4
	99/kg 99/kg	<3	660000	- :	-	÷	<3 <3	- :	-	<4 5 <3	Ė		- :	-	6
trans-1-3-Dichloropropene 1,1,2-Trichloroethane' Tetrachloroethene (PCE)	µg/kg µg/kg	<3 <3 <3		- :	-	-:	<3 <3	- :	- :	<4 <3	:	-:-	- :		<3 <4 <3
1,3-Dichloropropane * Dibromochloromethane * 1,2-Dibromoethane *	140/kg	<3 <3 <3		-:-	Ξ	Ė	<3 <3	-:-		<4 <5 <3	= =	Ξ	-:-	==	<4 <5 <3
	µg/kg µg/kg	<3					<3 <3 <3			<3 <4 <5					<4
Li,1,1,2-Tetrachloroethane Ethylbenzene' p/m-Xylene'	pa/ka pa/ka pa/ka	<3 <3 <5	310000	- :		-	<3 <5	- :	-	<3 <4	:	-	- :	-	<5 <3 6
o-Xylene* Styrene		<3 <3	330000	- :	-		<3 <3	- :	-	<4 <3 <4			- :		4 <3 <4
Bromoform	µg/kg µg/kg	<3 <3 <3			Ė	Ė	<3 <3 <3			<4 <3 <3		Ŀ			<4 <3 <3
Bromoform Isopropylbenzene *	F1.79	<2 <4		- :	-	-:	<2 <4	- :	- :	<2 <4	:	-:-	- :		<2 <4
Bromoform Isopropylbenzene ' 1,1,2,2-Tetrachloroethane ' Bromobenzene 1,2,3-Trichloropropane '	pe/ke			-	Ξ	Ė	<4 <3 <3	-:-		<4 <3 23	==	Ξ	-:-	==	<4 <3 10
Bromoform Liopropylbenzene' 1,1,2,2-Tetrachloroethane' Bromobenzene 1,2,3-Trichloropropane' Propylbenzene' 2-Chlorotoluene	μα/kg μα/kg μα/kg μα/kg	<4 <3	2000												10
Bromoform  Isopropylbenzene ' 1,1,2,2-Tetrachloroetbane ' Bromobenzene 1,2,3-Trichloropropane ' Propylbenzene' 2-Chlorotoluene 1,3,5-Trimethylbenzene' 4-Chlorotoluene	μο/kg μο/kg μο/kg μο/kg	<3 <3 <3 <5	2000	-	-	_ :	<3 <5	-	_	<3 <5		_:			<3 <5
Bromoform Isoprogybeanne' 1,1,2,2-Tetrachloroethane' Bromobeanne 1,2,3-Trichloropropane' Propylbeanne' 2-Chlorotoluene 1,3,5-Trimethylbeanne' 4-Chlorotoluene 1,2,4-Trimethylbeanne' 1,2,4-Trimethylbeanne' 1,2,4-Trimethylbeanne'	99/49 99/49 99/49 99/49 99/49 99/49	<3 <3 <3 <5 <6 <4	2000			:	<5 <6 <4			<5 185 <4		-			<5 47 <4
Bromoform Espropylenzene* 1,1,2,2*-Tetrachloroethane* Bromobenzene 1,2,3*-Trichloropropane* Propylenzene* 2-Chlorotoluene 1,3-5*-Trimstrylenzene* 4-Chlorotoluene 1,3-5*-Trimstrylenzene* 4-Chlorotoluene 1,2-4-Trimstrylybenzene* see-Butylbenzene* 4-Deporter of the see-Butylbenzene*	pa/kg pa/kg pa/kg pa/kg pa/kg pa/kg pa/kg pa/kg	<3 <3 <3 <5 <6 <4	2000				<5 <6			<5 185					<5 47
Bromoform  Isogroy@bezzene' 1,1,2,2-1 Estrachbroesthane' Isogroy@bezzene' 1,2,3-1 Estrachbroesthane' Isomobezzene 1,2,3-1 Estrachbroesthane 1,3,5-1 Estrachbroesthane 1,3,5-1 Estrachbroestene' 4-4 Clearcholume 1 estrachbroestene' 1-2,4-4 Fromesthylbezzene' 1-2,4-4 Fromesthylbezzene' 1-2,4-4 Fromesthylbezzene' 1-3,5-1 Estrachbroestene' 1-3,5-1 Estrachbroestene' 1-3,5-1 Estrachbroestene' 1-4,4-4 Estrachbroestenee' 1-4,4	po/kg	<3 <3 <5 <6 <4 <4 <4 <4 <4 <4	2000				<5 <6 <4 <4 <4 <4 <4 <4 <4 <4			<5 185 <4 <4 <4 <4 <4 <4		-			<5 47 <4 <4 <4 <4 <4 <4
Bromoform  Ignoration  Ignorat		<3 <3 <3 <5 <6 <4 <4 <4 <4 <4 <4 <4 <4	2000				<5 <6 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <7			<5 185 <4 <4 <4 <4 <4 <4 <4 <7					<5 47 <4 <4 <4 <4 <4 <4 <4 <7
Bromoform  Isogroy@bezzene' 1,1,2,2-1 Estrachbroesthane' Isogroy@bezzene' 1,2,3-1 Estrachbroesthane' Isomobezzene 1,2,3-1 Estrachbroesthane 1,3,5-1 Estrachbroesthane 1,3,5-1 Estrachbroestene' 4-4 Clearcholume 1 estrachbroestene' 1-2,4-4 Fromesthylbezzene' 1-2,4-4 Fromesthylbezzene' 1-2,4-4 Fromesthylbezzene' 1-3,5-1 Estrachbroestene' 1-3,5-1 Estrachbroestene' 1-3,5-1 Estrachbroestene' 1-4,4-4 Estrachbroestenee' 1-4,4	porka porka porka porka porka porka porka porka porka porka porka	<3 <3 <5 <6 <4 <4 <4 <4 <4 <4	2000				<5 <6 <4 <4 <4 <4 <4 <4 <4 <4			<5 185 <4 <4 <4 <4 <4 <4		-			<5 47 <4 <4 <4 <4 <4 <4



	TP101A	TP102	TP102	TP104	TP105	TP106	WS101	WS102	WS103	WS104	WS105	WS106
Results	0.2	0.2	0.5	0.2	0.5	0.2	0.4	0.2	0.2	0.5	0.2	0.2
Benzo(a)anthracene	0.22	0.26	0.06	0.22	0.06	0.13	0.73	0.56	0.34	0.12	0.73	111.31
Chrysene	0.20	0.26	0.02	0.21	0.03	0.12	0.78	0.55	0.37	0.09	0.78	106.78
Benzo(b)fluoranthene	0.19	0.28	0.05	0.21	0.05	0.14	0.98	0.59	0.44	0.09	1.04	136.61
Benzo(k)fluoranthene	0.07	0.11	0.02	0.08	0.02	0.06	0.38	0.23	0.17	0.04	0.40	53.13
Dibenzo(ah)anthracene	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.07	0.04	0.04	0.12	17.26
Indeno(123cd)pyrene	0.11	0.18	0.04	0.11	0.04	0.11	0.52	0.30	0.23	0.04	0.60	70.34
Benzo(ghi)perylene	0.09	0.15	0.04	0.10	0.04	0.09	0.50	0.27	0.23	0.04	0.59	60.91
Benzo(a)pyrene	0.17	0.24	0.04	0.18	0.04	0.13	0.83	0.51	0.36	0.08	0.89	116.55

Ratio to BaP	TP101A	TP102	TP102	TP104	TP105	TP106	WS101	WS102	WS103	WS104	WS105	WS106	Min	Max	Culp st	udy limits
Ratio to Bar	0.2	0.2	0.5	0.2	0.5	0.2	0.4	0.2	0.2	0.5	0.2	0.2	IMILI	Max	Lower Limit	Upper Limit
Benzo(a)anthracene	1.29	1.08	1.50	1.22	1.50	1.00	0.88	1.10	0.94	1.50	0.82	0.96	0.82	1.50	0.12	12.43
Chrysene	1.18	1.08	0.50	1.17	0.75	0.92	0.94	1.08	1.03	1.13	0.88	0.92	0.50	1.18	0.12	11.61
Benzo(b)fluoranthene	1.12	1.17	1.25	1.17	1.25	1.08	1.18	1.16	1.22	1.13	1.17	1.17	1.08	1.25	0.11	10.85
Benzo(k)fluoranthene	0.41	0.46	0.50	0.44	0.50	0.46	0.46	0.45	0.47	0.50	0.45	0.46	0.41	0.50	0.04	3.72
Dibenzo(ah)anthracene	0.24	0.17	1.00	0.22	1.00	0.31	0.10	0.14	0.11	0.50	0.13	0.15	0.10	1.00	0.01	1.38
Indeno(123cd)pyrene	0.65	0.75	1.00	0.61	1.00	0.85	0.63	0.59	0.64	0.50	0.67	0.60	0.50	1.00	0.07	7.27
Benzo(ghi)perylene	0.53	0.63	1.00	0.56	1.00	0.69	0.60	0.53	0.64	0.50	0.66	0.52	0.50	1.00	0.08	8.22

			Sample ID	TP101A	TP102	WS106
			Depth	0.20	0.50	0.20
Test	Units	LOD	TSV	MG	NG	MG
pН	pH units	< 0.01	6.5-9.5	8.22	8.07	8.14
Sulphate #	mg/l	<0.05	250	1.06	0.67	3.92
Ammoniacal Nitrogen as N <sup>#</sup>	mg/l	< 0.03	0.6	0.04	0.05	< 0.03
Total Cyanide #	mg/l	<0.005	0.05	< 0.05	< 0.005	< 0.005
<u>Metals</u>						
Dissolved Arsenic #	μg/l	<0.9	10	< 0.9	<0.9	3.5
Dissolved Boron #	μg/l	<12	1000	<12	<12	<12
Dissolved Cadmium #	μg/l	< 0.03	5	<0.03	<0.03	< 0.03
Dissolved Chromium #	μg/l	<0.2	50	0.2	0.9	1.1
Dissolved Copper #	μg/l	<3	2000	<3	<3	<3
Dissolved Lead #	μg/l	<0.4	10	<0.4	<0.4	5.9
Dissolved Nickel #	μg/l	<0.2	20	0.8	0.4	<0.2
Dissolved Selenium #	μg/l	<1.2	10	<1.2	<1.2	<1.2
Dissolved Zinc #	μg/l	<3	10.9	4	4	<3
Mercury Dissolved by CVAF #	μg/l	<0.01	1	0.02	< 0.01	<0.01

Concentration exceeds TSV (Tier 1 Screening value) Drinking Water Standard (DWS) Environmental Quality Standard (EQS)