SOUTH HEYWOOD LINK ROAD, COLLOP GATE FARM & CASEYS TIP, HEYWOOD

FINAL FACTUAL REPORT

Job Number: LKC 19 1015b
Date: October 2019
Client: Russells Construction



INCREASING LAND VALUE

LK GROUP

LK Consult

Document Verification

Site Address	North East Corner of Caseys Tip, off Pilsworth Road, Heywood, OL10 2TD and Land at Collop Gate Farm, Manchester Road, Heywood, OL10 2PX		
Report Title	Final Factual Report		
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R1	Oct 2019	Addition of monitoring data	

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EXECUTIVE SUMMARY

Site Details

Site Location:	North east corner of Casey's Tip to the south of the junction between Pilsworth Road and Hareshill Road, Heywood. Centred at National Grid Reference 384575E 409515N and, Pastoral fields south of Collop Gate Farm, east of Manchester Road, west of Middleton Road and north of the Junction 19 M62 Eastbound exit slip road, Heywood. National Grid Reference 386040E 408970N.
Current Land Use:	Casey's Tip - Undeveloped grassland. Collop Gate Farm – Pastoral fields.
Proposed Development:	Link road.
Purpose of Report:	Contamination and Geotechnical Information.

Ground Investigation Work Undertaken

Date of Investigation:	14th June to 11th July 2019
Intrusive Investigation Work Undertaken:	2no. Window Sample boreholes (BH303 and BH305). 4no. Cable Percussive boreholes (BH301, BH302, BH304 and BH306). 6no. Rotary Core follow-on (BH301 to BH306 inclusive). 13no. Rotary Open Holes (BH401 to BH413).
Monitoring Wells:	Wells were installed in BH301 to BH306 inclusive.
Soil Sampling:	16no. samples tested for metals, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, speciated PAHs, FOC and asbestos screen. 7no. samples tested for water content, phenol, BTEX, MTBE, speciated PAHs, VOCs and SVOCs. 2no. sample tested for water content, speciated PAHs and asbestos screen.
Groundwater Sampling:	2no. samples tested for pH, sulphate, magnesium, nitrate and chlorine. 3no samples tested for pH, sulphate, sulphide, metals, nitrate, chlorine, speciated PAHs, cyanide, pH, sulphate, hardness, phenol, TPHCWG, VOCs and SVOCs.
Monitoring:	3no. monitoring visits over six weeks.
Insitu and Laboratory Geotechnical Testing:	15no. BRE testing. 25no. Moisture content (soils). 4no. Moisture content (rocks). 3no. Organic matter content. 25no. Atterberg Limit tests. 1no. Undrained Triaxial. 21no PSD (Wet Sieve and Sedimentation) 3no. Moisture Condition Value. 10no. Point Load Tests.

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1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by Russells Construction to carry out intrusive investigation works on the north corner of Casey's Tip, off Pilsworth Road, Heywood and fields within Collop Gate Farm, off Manchester Road, Heywood.

LKC are aware of the following work which has previously been undertaken:

- Commercial Development Land, Hareshill Road, Heywood – Phase 2 Geo-environmental Site Assessment, undertaken by E3P (Ref: 11-697-r1, dated July 2018)

The main works and purpose of the contract as specified by Principal Designer and Investigation Supervisor (AECOM) were as follows:

> The Rochdale Borough Council (the Client), proposed to widen the existing eastbound 2 lane exit slip road at Junction 19 of the M62 motorway to incorporate an additional 3.6m wide dedicated left turn lane onto the new South Heywood Link Road. The Link Road itself comprises a new 2.2km link road between the junction of Pilsworth Road / Hareshill Road and Junction 19 of the M62.
>
> A site investigation is required to provide information to assess the geotechnical, geo-environmental, geological and or hydrogeological ground conditions. The objectives of the preliminary investigation are to:
>
> - Determine ground and groundwater conditions below the site.
> - Determine the geotechnical properties of the ground profile below the site.
> - Provide preliminary information for Coal Mining Risk Assessment.
> - Identify the presence of geotechnical and geo-environmental hazards that may affect the proposed development.
> - Determine the chemical properties of the soil and ground water at the site with regards to contamination and aggressiveness to concrete.

1.2 Site Details

A summary of the site details is presented in Table 1-1. Figures 1 and 2 indicate the site location and investigation area. Figure 3 indicates the location of intrusive works.

Location	The study site comprises two discrete areas: North east corner of Casey's Tip to the south of the junction between Pilsworth Road and Hareshill Road, Heywood. Centred at National Grid Reference 384575E 409515N and; Pastoral fields south of Collop Gate Farm, east of Manchester Road, west of Middleton Road and north of the Junction 19 M62 Eastbound exit slip road, Heywood. National Grid Reference 386040E 408970N.
Topography	Caseys Tip is raised above the surrounding area and falls steeply downwards to the northwest, northeast and the southeast. Study area levels vary between approx. 119mAOD and approx. 130mAOD. Collop Gate Farm study slopes down from the south, northwest and east towards a small stream that runs through the middle of the site. Study area levels vary between approx. 118mAOD and approx. 130mAOD.
Land Use	Caseys Tip Site Rough grassland with a drainage ditch running along the northwest boundary. Surrounding Area Northwest: Pilsworth Road with industrial units beyond that. Northeast: Hareshill Road with industrial units beyond that. Southeast: Undeveloped grassland, part of Caseys Tip. Southwest: Undeveloped grassland, part of Caseys Tip. Collop Gate Farm Site Collop Gate Farm consists of pastural grassland. Surrounding Area North: Pastural grassland. East: Middleton Road (A6046) and residential properties. South: M62. West: Manchester Road (A6045).
Proposed Development	Link road.

Table 1-1: Summary of site details.

2 Ground Investigation

2.1 Site Investigation Design and Methodology

In order to assess the ground conditions at the site an intrusive investigation was undertaken.

The investigation was carried out from the 19th June to 11th July 2019 and comprised the following:

- 2no. window sample boreholes drilled to 7.86-8.89 metres below ground level (mbgl) (ref. BH303 and BH305).
- 3no. cable percussion boreholes drilled to 12.21-14.45mbgl (ref. BH302, BH304 and BH306).
- 5no. follow on rotary boreholes drilled to 16.00-23.00mbgl (ref. BH302-BH306).
- 13no. rotary boreholes drilled to 40mbgl (ref. BH401-BH413).

Cable percussion boreholes were carried out to allow an assessment of the deeper ground conditions for geotechnical purposes.

The rotary boreholes were drilled to assess the risk associated with coal mining. The data from the rotary boreholes will be included within the ground conditions in Section 3.

All site investigation locations are shown in Figure 3.

The intrusive locations were initially specified by AECOM with variations from the specified locations agreed with AECOM prior to drilling. Locations and elevations of the intrusive positions were captured on site by Site Surveying Services Ltd.

All profile logs are provided in Appendix A and are in line with BS14688-1[1] and BS5930[2].

2.2 Well Installations

Boreholes BH301 to BH306) were installed with monitoring wells for gas and groundwater monitoring and sampling. A dual installation of both a 50mm and a 19mm well was installed in BH301.

Monitoring wells were installed in accordance with BS10175 and CIRIA C665[3] and comprised between 2.40m and 9.50m plain pipe over a length of slotted pipe surrounded by pea gravel and sealed at the top with bentonite and concrete. The construction of the well installations was prior agreed with the Investigation Supervisor.

Well installation details are provided in the profile logs in Appendix A.

[1] British Standards (2002) Geotechnical investigation and testing – Identification and Classification of Soil. Part 1: Identification and description. BS EN ISO 14688-1:2002.
[2] British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.
[3] CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

2.3 Sampling Protocol

2.3.1 Soil Sampling (Contamination)

Standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation[4].

Soil was collected for onsite testing. A plastic zip bag was half filled with soil allowing a suitably sized headspace. The bag was sealed and stored for at least 20 minutes before being tested for total volatile organic compounds (TVOCs) using a PhoCheck Tiger photoionisation detector (PID). Results of the PID readings are presented on the profile logs in Appendix A. The on-site monitoring was carried out in line CIRIA C665[5] to aid in screening samples for volatile analysis.

Soil samples of approximately 500g were recovered in amber jars, amber vials for volatile analysis and plastic tubs. All the samples were labelled and stored in cool boxes prior to being collected by courier for delivery to the Chemtest laboratory in Newmarket for chemical testing. Prior to collection, samples were stored in the sample storage fridge at the LK Group offices below 4˚C. Samples were tracked using appropriate Chain of Custody forms provided by Chemtest.

Many of the contamination tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix B. Table 2-1 shows the soil testing undertaken.

Suites and Contaminants	No. Samples	Location & Depth	
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, speciated PAHs, FOC and asbestos screen. (Suite E)	16	BH301 (0.00-0.60m) BH302 (0.00-0.60m BH302 (1.20-2.00m) BH302 (4.00-5.00m) BH303 (0.50-0.80m) BH303 (0.80-1.20m) BH304 (0.00-0.50m) BH304 (3.00-4.00m)	BH304 (5.00-6.00m) BH305 (0.00-0.30m) BH305 (0.50-1.20m) BH306 (0.00-0.50m) BH306 (1.20-2.00m) BH306 (3.00-4.00m) BH306 (6.00-7.00m) BH306 (8.00-8.50m)
Water content, phenol, BTEX, MTBE, speciated PAHs, VOCs and SVOCs. (Suite F)	7	BH302 (0.60-1.20m) BH302 (3.00-4.00m) BH303 (0.00-0.50m) BH304 (0.50-1.20m)	BH305 (0.30-0.50m) BH306 (0.50-1.20m) BH306 (4.00-5.00m)
Water content, speciated PAHs and asbestos screen. (Suite G)	2	BH302 (2.00-3.00m) BH304 (1.20-2.00m)	

Table 2-1: Summary of soil sample testing undertaken.

Notes:
If asbestos present during screen identification and quantification will be undertaken.
Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, BTEX=Benzene, Toluene, Ethylbenzene and Xylenes; MTBE=Methyl tert-butyl ether, VOC=Volatile organic Compounds, SVOC=Semi Volatile Organic Compounds, FOC=Fraction of Organic Carbon.

Leaching tests were also undertaken on selected soil samples, the results of which are displayed with the soil samples in the Certificate of Analysis presented in Appendix B. Table 2-2 shows the leaching testing undertaken.

[4] EA (2000). "Technical Aspects of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.
[5] CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

It should be noted that the leaching test is an aggressive test and may not give results that are truly representative; particularly for organic contaminants.

Suites and Contaminants	No. Samples	Location
Metals / metalloids, pH, EC, sulphate, chloride, ammoniacal nitrogen, nitrate sulphur, cyanide suite, TPHCWG, BTEX, speciated PAHs, phenol, VOCs and SVOCs.	2	BH302 (2.00-3.00m) BH304 (1.20-2.00m)

Table 2-2: Summary of leaching sampling tests undertaken.
Notes:
Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, BTEX=benzene, toluene, ethylbenzene and xylenes; MTBE=Methyl tert-butyl ether, VOC=Volatile organic Compounds, SVOC= Semi Volatile Organic Compounds.

2.3.2 Water Sampling and Testing

To establish the condition of shallow and deep groundwater LKC undertook five groundwater samples.

The groundwater samples were collected a minimum of 1 week after drilling had finished and following well development. Sample collection was undertaken using a low flow sampling pump using thin walled tubing to encourage laminar flow and minimise the potential loss of volatiles during sampling. The borehole was purged of all standing water and the sample collected from the recharged water. A water meter was used to test the pH, temperature and conductivity before sampling until equilibrium conditions were met, as per BS10175[6] guidelines. This data is provided in Appendix C.

All water samples were placed in glass bottles, plastic bottles and septum topped vials and stored in ice packed cool boxes. The samples were sent to Chemtest on the same day for analysis.

Sampling was carried out in accordance with BS5930[7] and BS5667-11[8]. Table 2-3 shows the groundwater and leaching testing undertaken.

Suites and Contaminants	No. Samples	Location
pH, sulphate, magnesium, nitrate and chlorine. (Suite D)	2	BH301 (50mm) BH303
pH, sulphate, sulphide, metals, nitrate, chlorine, speciated PAHs, cyanide, pH, sulphate, hardness, phenol, TPHCWG, VOCs and SVOCs. (Suite H)	3	BH302 BH304 BH305

Table 2-3: Summary of groundwater sample testing undertaken.
Notes:
Metal/metalloids=arsenic, barium, beryllium, cadmium, calcium, chromium(total and VI), copper, lead, magnesium, mercury, nickel, potassium, selenium, sodium, vanadium and zinc; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, VOC=Volatile organic Compounds, SVOC=Semi Volatile Organic Compounds.

[6] British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice". BS10175:2017.
[7] British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.
[8] British Standard (2009). "Water Quality – Sampling. Part 11: Guidance on Sampling of Groundwaters". BS ISO 5667-11:2009.

The results of the groundwater sampling are presented in Appendix D.

2.4 Gas Monitoring

Three gas monitoring visits have been undertaken over the course of six weeks.

Monitoring is being undertaken using a Geotechnical Instruments GA5000 in accordance with the monitoring protocol outlined in CIRIA C665[9] (flow rate measured first). The monitoring will aim to be undertaken over a range of weather conditions (including low and falling barometric pressure and heavy rain) to demonstrate worst-case conditions.

The gas monitoring results are reproduced in Appendix E.

2.5 Geotechnical Testing

2.5.1 In-situ Onsite Geotechnical Testing

In-situ geotechnical tests were performed in the boreholes to further characterise the sub-soil conditions. The following tests were undertaken:

- Standard Penetration Tests (SPTs) were performed in the window sample boreholes at approximately 1.00m intervals, and within cable percussion boreholes, at 1.00m intervals for the first 5.00m, and at 1.50m intervals after that.
- Shear Vane tests (giving undrained shear strength) were performed in the window sample boreholes at approximately 1.00m intervals, within the natural clay strata. Shear Vane tests were undertaken in cable percussion boreholes only within the discarded shoe cutting of U100 samples.

The SPT and shear vane readings are provided within the profile logs in Appendix A.

2.5.2 Laboratory Geotechnical Testing

Soil samples taken during the investigation were collected in tubs, bulk bags and sealed U100 tubes and sent to Murray Rix Laboratories and Chemtest for geotechnical testing.

Many of the tests are UKAS accredited and further details are given in the laboratory report presented in Appendix F. Table 2-4 shows the geotechnical testing undertaken.

Suites and Contaminants	No. Samples	Location	
BRE (Suite D) pH and water-soluble sulphate also included in contamination testing Suite E.	15	BH301 (1.20-1.65m) BH301 (4.00-4.45m) BH302 (0.60-1.00m) BH302 (3.00-4.00m) BH302 (4.00-4.45m) BH302 (9.50-9.95m) BH303 (2.00-2.45m) BH303 (6.00-6.45m)	BH304 (2.00-2.45m) BH304 (5.00-5.45m) BH304 (7.10m) BH305 (3.00-3.45m) BH306 (2.00-2.45m) BH306 (3.00-3.45m) BH306 (5.00-5.45m)
Organic Matter Content	3	BH302 (3.00-4.00m) BH304 (0.50-1.20m)	BH304 (4.00-5.00m)

Table 2-4: Summary of geotechnical testing undertaken.

[9] CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

Suites and Contaminants	No. Samples	Location	
Atterberg Limits (plasticity testing) and Moisture Content	25	BH301 (0.60m) BH301 (2.00-2.45m) BH301 (3.00-3.45m) BH301 (6.50-6.95m) BH301 (7.60m) BH302 (2.00-3.00m) BH302 (4.00-4.45m) BH302 (5.00-5.45m) BH302 (6.50-6.95m) BH302 (8.00-8.45m) BH303 (1.20-1.65m) BH303 (4.00-4.45m) BH303 (5.00-5.45m)	BH304 (2.00-2.45m) BH304 (3.00-3.45m) BH304 (4.00-4.45m) BH304 (6.50-6.95m) BH304 (8.00-8.45m) BH304 (12.50-12.95m) BH305 (1.20-1.65m) BH305 (2.00-2.45m) BH306 (7.60m) BH306 (8.00-8.45m) BH306 (8.80m) BH306 (11.00-11.45m)
Undrained Triaxial	1	BH304 (8.00-8.45m)	
Particle Size Distribution (PSD) Wet Sieve and Sedimentation	22	BH301 (2.00-2.45m) BH301 (3.00-3.45m) BH301 (6.50-6.95m) BH302 (0.60-1.00m) BH302 (2.00-2.45m) BH302 (4.00-4.45m) BH302 (5.00-5.45m) BH302 (8.00-8.45m) BH303 (1.50-2.00m) BH303 (2.20-3.00m) BH304 (2.00-2.45m)	BH304 (3.00-3.45m) BH304 (4.00-4.45m) BH304 (8.00-8.45m) BH305 (1.50-2.00m) BH305 (2.40-3.00m) BH305 (4.00-5.00m) BH306 (1.20-1.65m) BH306 (2.00-2.45m) BH306 (3.00-3.45m) BH306 (5.00-5.45m) BH306 (9.50-9.95m)
Moisture Condition Value	3	BH302 (5.00-5.45m) BH304 (6.50-6.95m)	BH305 (1.50-2.00m)
Moisture Content Determination	4	BH301 (30.00-30.60m) BH301 (31.00-31.30m)	BH303 (15.80-16.00m) BH304 (20.70-20.90m)
Point Load Tests (On Diametric, two Axial per sample)	10	BH301 (30.00-30.60m) BH301 (31.00-31.30m) BH301 (34.40-34.60m) BH302 (18.00-18.15m) BH302 (18.70-18.80m)	BH302 (19.50-19.60m) BH304 (20.70-20.90m) BH305 (11.50-11.60m) BH305 (12.30-12.40m) BH305 (14.40-14.70m)

Table 2-4(continued): Summary of geotechnical testing undertaken.

2.6 Laboratory Restrictions

The following samples were requested by AECOM but were unable to be undertaken by the labs.

Suites and Contaminants	No. Samples	Location		Reason sampling was not undertaken
Compaction 2.5kg	13	BH301 (1.20-1.65m) BH301 (3.00-3.45m) BH302 (1.20-1.65m) BH302 (3.00-3.45m) BH303 (1.50-2.00m) BH303 (2.20-3.00m) BH304 (2.00-2.45m)	BH304 (4.00-4.45m) BH304 (9.50-9.95m) BH305 (2.40-3.00m) BH306 (2.00-2.45m) BH306 (3.00-3.45m) BH306 (5.00-5.45m)	Insufficient sample Between 20kg and 40kg required.

Table 2-5: Laboratory Restrictions.

Due to the weak laminated nature of the rock it was not possible to undertake Unconfined Compression Testing on the rock cores.

3 Ground Conditions

3.1 Geology – Generalised Sequence

A summary section of the logs is provided in Plate 3-1, with additional comments below.

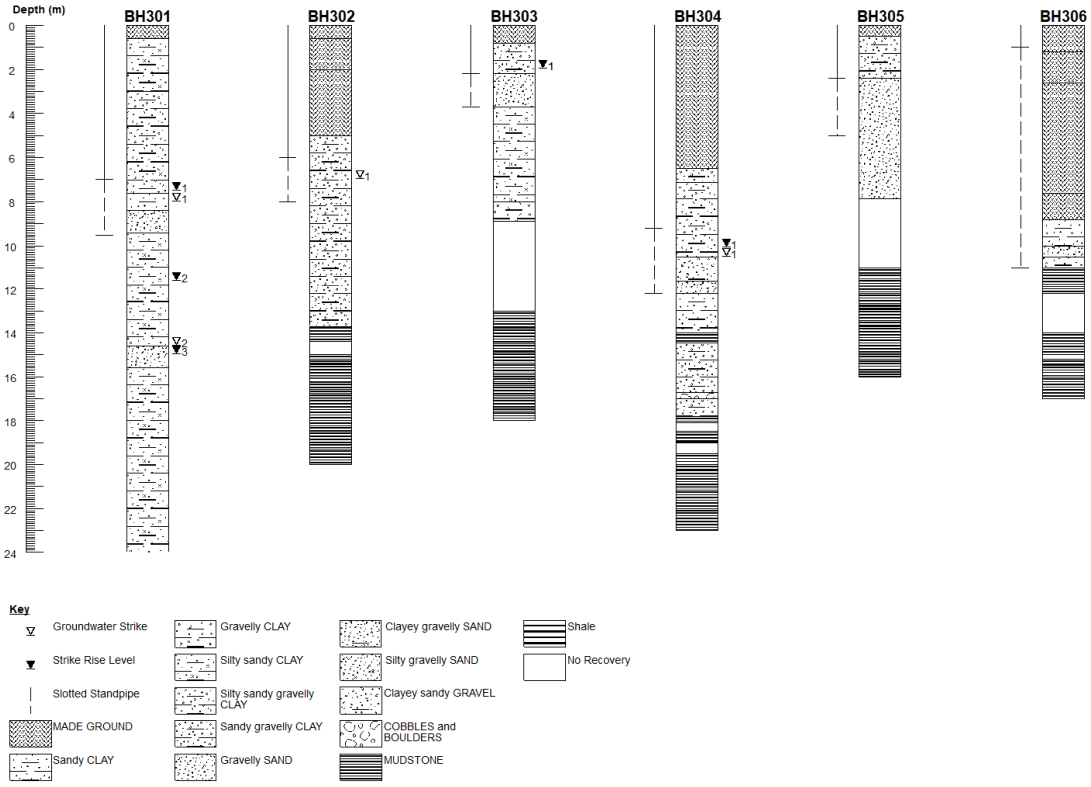

Plate 3-1: Summary of ground conditions.

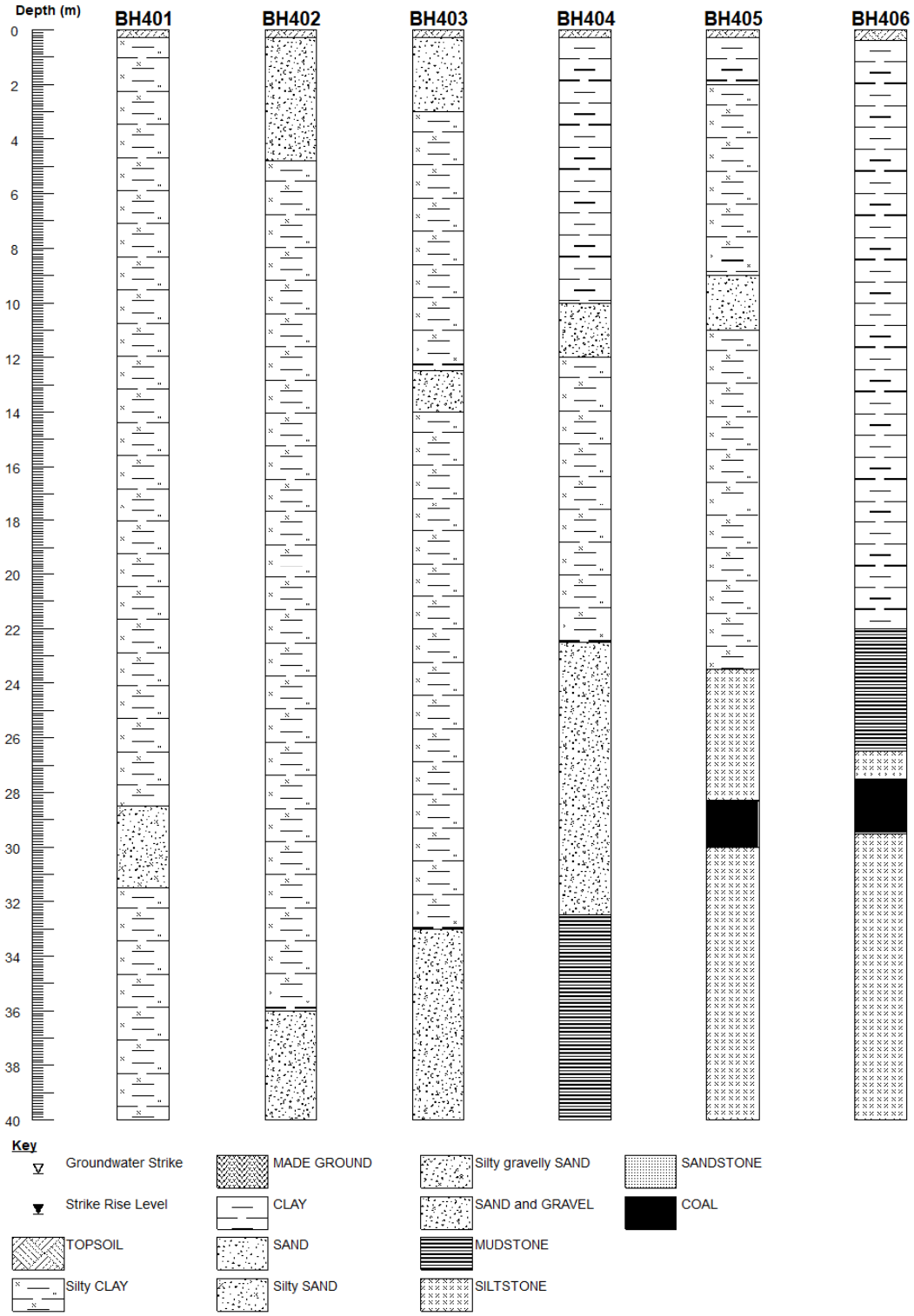

Plate 3-1(continued): Summary of ground conditions.

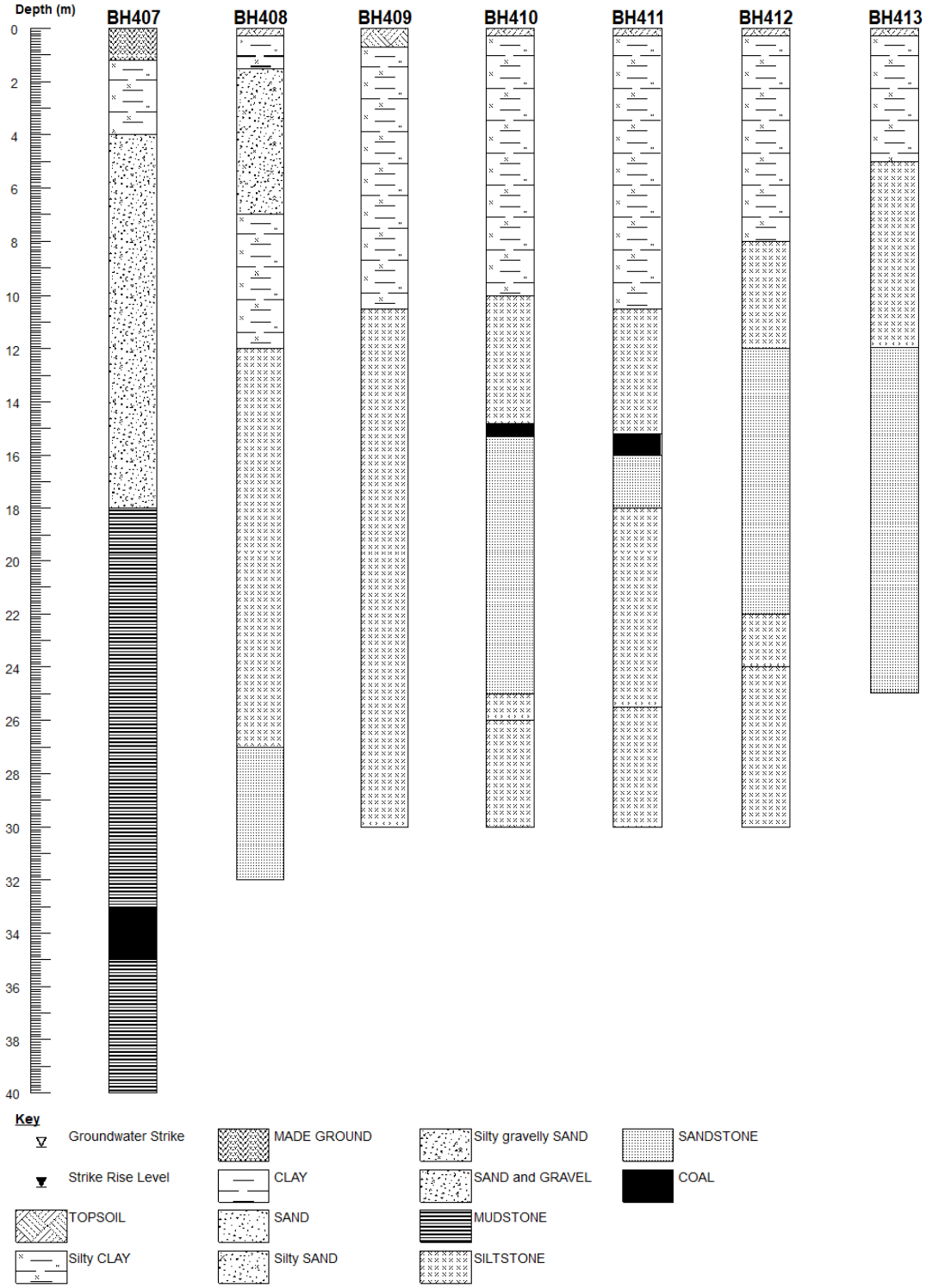

Plate 3-1(continued): Summary of ground conditions.

Additional information on ground conditions:

Made ground within the Collop Gate Farm site consisted of predominantly reworked sandy silt and sandy clay with rare pottery fragments and ash.

Deeper made ground was present in the Caseys Tip location to a maximum depth of 8.80mbgl. This consisted predominantly of sandy clay with pottery, brick and ash, with organic inclusions. In BH302 and BH306 sands and gravels with occasional sandstone

boulders were also encountered between 0.60 to 2.00mbgl and 1.60 to 2.60mbgl respectively.

Superficial deposits comprised sandy silty clay with occasional bands of sand and gravel.

Bedrock within the Collop Gate Farm area (mudstones and siltstones) was encountered at 5.00mbgl in BH413 in the west of the site, and was not encountered in the east of the site, with boreholes undertaken to 40.00mbgl.

Coal seams were encountered in BH405 (28.30 to 30.00mbgl), BH406 (27.50 to 29.50mbgl), BH407 (33.00 to 35.00mbgl), BH410 (14.80 to 15.30mbgl) and BH411 (15.20 to 16.00mbgl).

Bedrock (shaley mudstone) was recorded within the Caseys Tip area between 11.00 to 17.80mbgl.

Photographs of the core boxes are provided in Appendix G.

3.2 Groundwater

3.2.1 Groundwater Levels

Groundwater strikes were recorded in boreholes during the investigation. In addition, groundwater monitoring within the borehole wells has been undertaken on a number of occasions to date. An oil-water interface probe (approximately 1cm detection limit) was used to detect the presence of free phase hydrocarbons within each borehole.

Results are summarised in Table 3-1.

BH	Water Strike Depths (mbgl)	Well Response Zone (mbgl)	No. of Monitoring Visits	Monitoring Depths (mbgl)			Sample Taken?	Evidence of Contam?
				Min	Max	Base		
BH301 (50mm)	8.00 14.60 25.95	9.50-15.50 (cgS)	6	0.72	1.10	15.50	Y	N
BH301 (19mm)		7.00-9.50 (sC+sigS)	6	0.68	1.47	9.50	Y	N
BH302	7.00	6.00-8.00 (sgC)	4	4.02	4.47	8.00	Y	N
BH303	2.00	2.20-3.70 (gS)	4	1.96	2.04	3.70	Y	N
BH304	10.50	9.20-12.20 (sgsiC+csG +cgS)	4	3.33	5.69	12.20	Y	N
BH305	DRY	2.40-5.00 (gS)	4	2.43	2.50	5.00	Y	N
BH306	DRY	8.50-11.00 (cgS+ssiC)	4	9.59	9.66	11.00	Y	N

Table 3-1: Summary of water strike depths within boreholes.
Response Zones:
sC = sandy CLAY; ssiC = sandy silty CLAY; sgC = sandy gravelly CLAY; sgsiC = sandy gravelly silty CLAY; gS = gravelly SAND; cgS = clayey gravelly SAND; sigS = silty gravelly SAND; csG = clayey sandy GRAVEL.

Groundwater fluctuated over the monitoring period, especially during times of heavy rainfall where some areas of the site were waterlogged.

3.3 In-Situ Geotechnical Testing

3.3.1 Standard Penetration Tests

In-situ standard penetration tests (SPTs) were undertaken, predominantly in the natural ground. The results are summarised in Table 3-2 and provided within the profile logs in Appendix A.

Approximate Depth (mbgl)	SPT 'N' Values		
	BH301	**BH302**	**BH303**
1.20-1.65	17 (ssiC)	36 (MG)	10 (sgC)
2.00-2.45	0 (ssiC)	2 (MG)	16 (sgC)
3.00-3.45	7 (sgsiC)	14 (MG)	20 (gS)
4.00-4.45	8 (sgsiC)	9 (MG)	22 (ssiC)
5.00-5.45	-	9 (sgC)	33 (ssiC)
6.00-6.45	-	-	42 (ssiC)
6.50-6.95	11 (sgsiC)	35 (sgC)	-
7.00-7.45	-	-	38 (ssiC)
8.00-8.45	9 (sC)	32 (sgC)	32 (gC)
8.50-8.95	-	-	50 (gC)
9.50-9.95	20 (ssiC)	29 (sgC)	-
11.00-11.45	-	35 (sgC)	-
12.00-12.45	14 (ssiC)	-	-
12.50-12.95	-	30 (sgC)	-
14.00-14.45	-	50 (Mst)	-
14.40-14.65	-	50 (Mst)	-
16.50-16.95	22 (ssiC)	-	-
19.50-19.95	19 (ssiC)	-	-
22.50-22.95	23 (ssiC)	-	-
25.50-25.95	31 (ssiC)	-	-
27.00-27.45	50 (gS)	-	-
27.50-27.95	50 (Mst)	-	-
GW Level	8.00 14.60 25.95	7.00	2.00

Table 3-2: Summary of SPT (N) values.

Approximate Depth (mbgl)	SPT 'N' Values		
	BH304	BH305	BH306
1.20-1.65	16 (MG)	9 (sgC)	10 (MG)
2.00-2.45	12 (MG)	23 (sgC)	8 (MG)
3.00-3.45	8 (MG)	36 (gS)	14 (MG)
4.00-4.45	10 (MG)	28 (gS)	9 (MG)
5.00-5.45	9 (MG)	50 (gS)	8 (MG)
5.50-5.95	-	45 (gS)	-
6.00-6.45	-	50 (gS)	-
6.50-6.95	10 (sgC)	-	8 (MG)
7.00-7.45	-	44 (gS)	-
7.50-7.95	-	50 (gS)	-
8.00-8.45	-	-	9 (MG)
9.50-9.95	21 (sgC)	-	6 (sC)
11.00-11.45	28 (csG)	-	50 (Mst)
11.90-12.35	-	-	50 (Mst)
12.50-12.95	50 (sC)	-	-
14.00-14.45	50 (B)	-	50 (Mst)
15.00-15.45	-	-	50 (Mst)
GW Level	10.50	DRY	DRY

Table 3-2: Summary of SPT (N) values.

Notes:
MG = Made Ground; sC = sandy CLAY; gC = gravelly CLAY; ssiC = sandy silty CLAY; sgC = sandy gravelly CLAY; sgsiC = sandy gravelly silty CLAY; gS = gravelly SAND; csG = clayey sandy GRAVEL; B = Boulder; Mst = MUDSTONE.
Groundwater level based on strikes during investigation.

3.3.2 Shear Vanes

Hand shear vane readings, recording undrained shear strength (USS), were taken within the clay strata. The results are summarised in Table 3-3 and provided within the profile logs in Appendix A.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m²)		
	BH301	BH302	BH303
1.20	-	-	50
2.00	-	-	40
4.00	-	-	50
5.00	-	-	130
13.95	50	-	-
21.45	40	-	-
24.45	50	-	-
GW Level	8.00 14.60 25.95	7.00	2.00

Table 3-3: Summary of average hand shear vane readings.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m²)		
	BH304	BH305	BH306
1.20	-	70	-
2.00	-	60	-
8.45	80	-	-
GW Level	10.50	DRY	DRY

Table 3-3(continued): Summary of average hand shear vane readings.

Notes:
Groundwater level based on strikes during investigation and monitoring data.
Shear vane readings can be influenced by coarse material including coarse silt.

3.4 Geotechnical Laboratory Testing

3.4.1 Multi Stage Triaxial Test

Multi stage triaxial testing has been undertaken on one sample of the natural clay strata. The results are presented in Appendix F and summarised in Table 3-4.

Location	Depth (mbgl)	Material Description	Undrained Shear strength (kPa)
BH304	8.00-8.45	Stiff brown silty sandy CLAY with rare gravel	114, 116, 118

Table 3-4: Summary of multi stage triaxial results.

3.4.2 Particle Size Distribution

Particle size distribution (PSDs) tests were carried out on granular strata to confirm the material type. Full results are presented in Appendix F and summarised below in Table 3-5.

Location	Depth (mbgl)	Material	Percent passing through sieve		
			63mm	2mm	0.063mm
BH301	2.00-2.45	Soft brown silty very sandy CLAY with rare gravel	100	90	43
BH301	3.00-3.45	Firm brown silty very sandy CLAY with rare gravel	100	97	57
BH301	6.50-6.95	Stiff brown silty sandy CLAY with rare gravel	100	97	66
BH302	0.60-1.00	Brown slightly clayey silty sandy fine to coarse GRAVEL	93	30	20
BH302	2.00-2.45	Soft brown silty sandy CLAY with frequent gravel	100	78	57
BH302	4.00-4.45	Soft brown silty sandy CLAY with occasional gravel	100	82	49
BH302	5.00-5.45	Stiff brown silty sandy CLAY with rare gravel	100	93	60
BH302	8.00-8.45	Stiff brown silty very sandy CLAY with rare gravel	100	96	47
BH303	1.50-2.00	Stiff brown silty sandy CLAY with rare gravel	100	94	55
BH303	2.20-3.00	Brown silty sandy fine to coarse GRAVEL	100	35	7
BH304	2.00-2.45	Brown silty sandy fine to coarse GRAVEL	100	13	5
BH304	3.00-3.45	Stiff brown silty sandy CLAY with frequent gravel	100	74	46
BH304	4.00-4.45	Brown slightly clayey silty sandy GRAVEL	100	47	18
BH304	8.00-8.45	Stiff brown silty sandy CLAY with rare gravel	100	91	50
BH305	1.50-2.00	Stiff brown silty sandy CLAY with rare gravel	100	93	60
BH305	3.00-4.00	Brown silty SAND and GRAVEL	100	44	7
BH305	4.00-5.00	Brown silty SAND and GRAVEL	100	52	11

Table 3-5: Summary of particle size distribution results.

Location	Depth (mbgl)	Material	Percent passing through sieve		
			63mm	2mm	0.063mm
BH306	1.20-1.65	Brown silty sandy fine to coarse GRAVEL	75	20	10
BH306	2.00-2.45	Brown silty sandy fine to coarse GRAVEL	55	16	6
BH306	3.00-3.45	Firm brown silty sandy CLAY with abundant gravel	100	68	47
BH306	5.00-5.45	Firm brown silty sandy CLAY with abundant gravel	82	60	49
BH306	9.50-9.95	Firm brown silty very sandy CLAY with rare gravel	100	95	53

Table 3-5(continued): Summary of particle size distribution results.
Notes:
% passing: 63mm = cobble / gravel boundary; 2mm = gravel / sand boundary; 0.063mm = sand / silt boundary

3.4.3 Atterberg Limits

Representative samples of natural clay were subjected to Atterberg Limits (plasticity) and Moisture Content testing. Results are presented in Appendix F and summarised in Table 3-6.

Table 3-6 also includes the modified plasticity index as detailed in Chapter 4.2-D5 of the NHBC standards (modified plasticity index = plasticity index x % less than 425µm sieve / 100%).

Location	Depth (mbgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Class	Passing 425 micron (%)	Modified Plasticity Index (%)
BH301	0.60	27	30	12	18	CL	95	17.10
BH301	2.00-2.45	17	25	14	11	CL	91	10.01
BH301	3.00-3.45	13	35	12	23	CL/CI	95	21.85
BH301	6.50-6.95	18	39	14	25	CI	100	25.00
BH301	7.60	14	33	12	21	CL	94	19.74
BH302	2.00-3.00	35	56	25	31	CH	100	31.00
BH302	4.00-4.45	19	31	14	17	CL	92	15.64
BH302	5.00-5.45	16	35	13	22	CL/CI	96	21.12
BH302	6.50-6.95	12	34	11	23	CL	93	21.39
BH302	8.00-8.45	8.1	30	10	20	CL	96	19.20
BH303	1.20-1.65	11	26	10	16	CL	95	15.20
BH303	4.00-4.45	16	29	12	17	CL	97	16.49
BH303	5.00-5.45	12	28	12	16	CL	94	15.04

Table 3-6: Summary of plasticity index testing.

Location	Depth (mbgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Class	Passing 425 micron (%)	Modified Plasticity Index (%)
BH304	2.00-2.45	19	33	15	18	CL	90	16.20
BH304	3.00-3.45	27	52	24	28	CH	100	28.00
BH304	4.00-4.45	19	47	17	30	CI	100	30.00
BH304	6.50-6.95	14	32	11	21	CL	95	19.95
BH304	8.00-8.45	13	35	13	22	CL/CI	81	17.82
BH304	12.50-12.95	9.7	31	11	20	CL	93	18.60
BH305	1.20-1.65	15	34	12	22	CL	92	20.24
BH305	2.00-2.45	13	27	12	15	CL	92	13.80
BH306	7.60	17	32	13	19	CL	95	18.05
BH306	8.00-8.45	14	30	13	17	CL	93	15.81
BH306	8.80	12	33	10	23	CL	93	21.39
BH306	11.00-11.45	24	49	22	27	CI	99	26.73

Table 3-6(continued): Summary of plasticity index testing.

The modified plasticity index is between 10.01% and 31%. This characterises the clay as having a low to medium volume change potential.

3.4.4 Sulphate and pH

Water soluble sulphate and pH tests were carried out on soil samples. Full results are presented in Appendix B and summarised in Table 3-7.

Strata	pH	Sulphate
	Soil	Soil (g/l)
Made Ground	5.4 to 8.4	<0.01 to 1.00
Natural	7.0 to 8.0	<0.01 to 0.022

Table 3-7: Summary of pH and sulphate results.

3.4.5 *Point Load Test*

Point Load testing, one diametric and two axial, has been undertaken on ten samples of the cored bedrock. The results are presented in Appendix F and summarised in Table 3-8.

Location	Depth (mbgl)	Axial $I_{s\,(50)}$ (MPa)	Diametric $I_{s\,(50)}$ (MPa)	Diametric $I_{s\,(50)}$ (MPa)
BH301	30.00-30.60	1.90	5.39	4.99
BH301	31.00-31.30	1.38	3.31	3.67
BH301	34.40-34.60	0.90	2.88	2.40
BH302	18.00-18.15	0.14	0.26	0.23
BH302	18.70-18.80	0.79	2.84	2.40
BH302	19.50-19.60	0.69	2.21	1.86
BH304	20.70-20.90	0.10	0.45	0.55
BH305	11.50-11.60	0.24	0.83	0.80
BH305	12.30-12.40	0.10	1.21	1.20
BH305	14.40-14.70	0.21	1.50	1.74

Table 3-8: Summary of point load test results.

3.4.6 *Further Information*

Moisture Content Testing was undertaken on all samples that underwent Atterberg Testing. This information, along with Organic Matter Content Testing and Moisture Condition Values, are present in Appendix F.

Figures

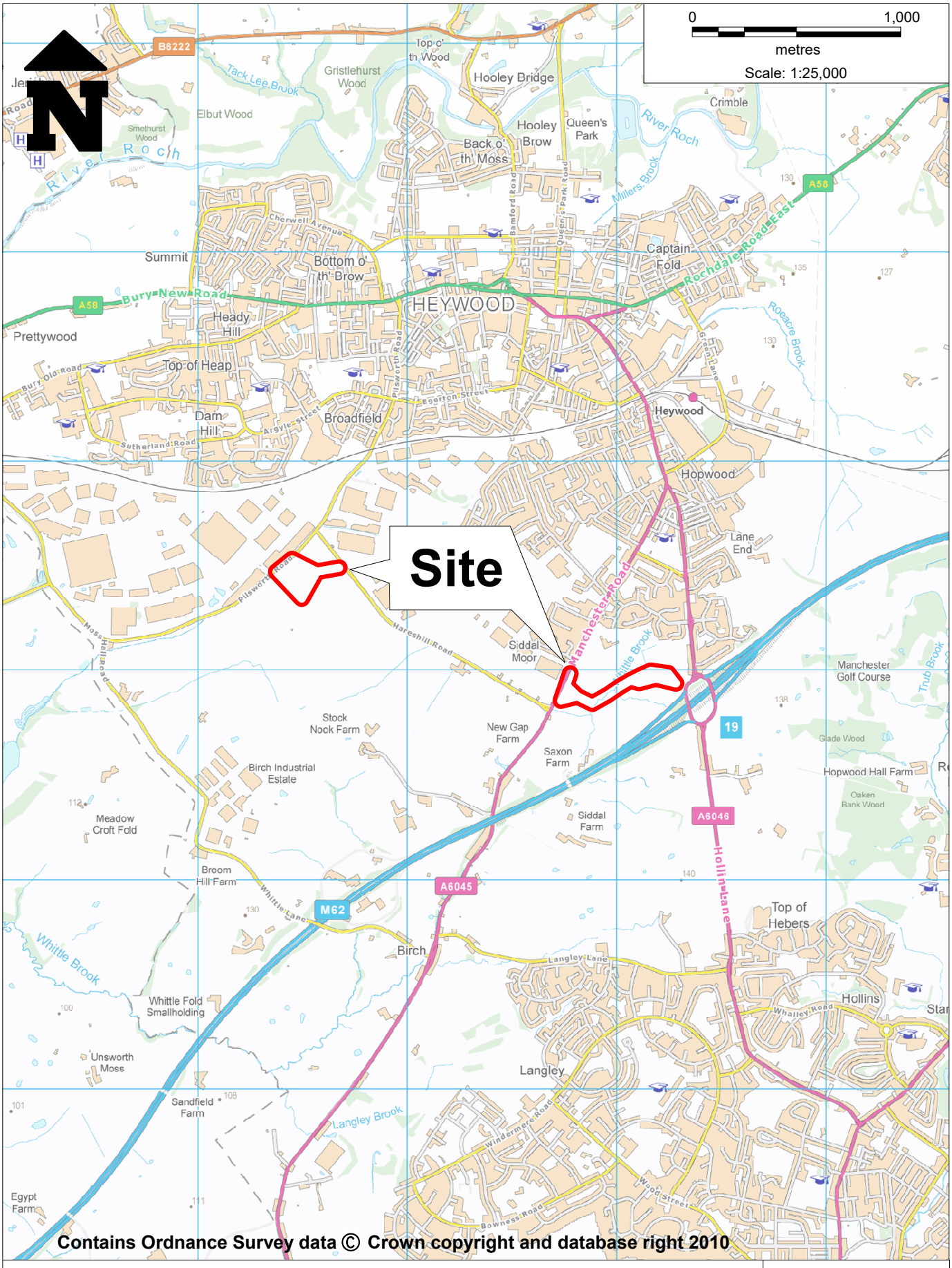

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Figure 1: Site Location Plan, M62 Junction 19 Link Road, Heywood

Drawn: August 2019 Scale: 1:25,000 @ A4 (see scale bar)

LK CONSULT LIMITED



Extract from: CAD Plan Supplied by Client
Drawing Ref: Exploratory Hole Plan (29/11/2018)

KEY

Investigation Area

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

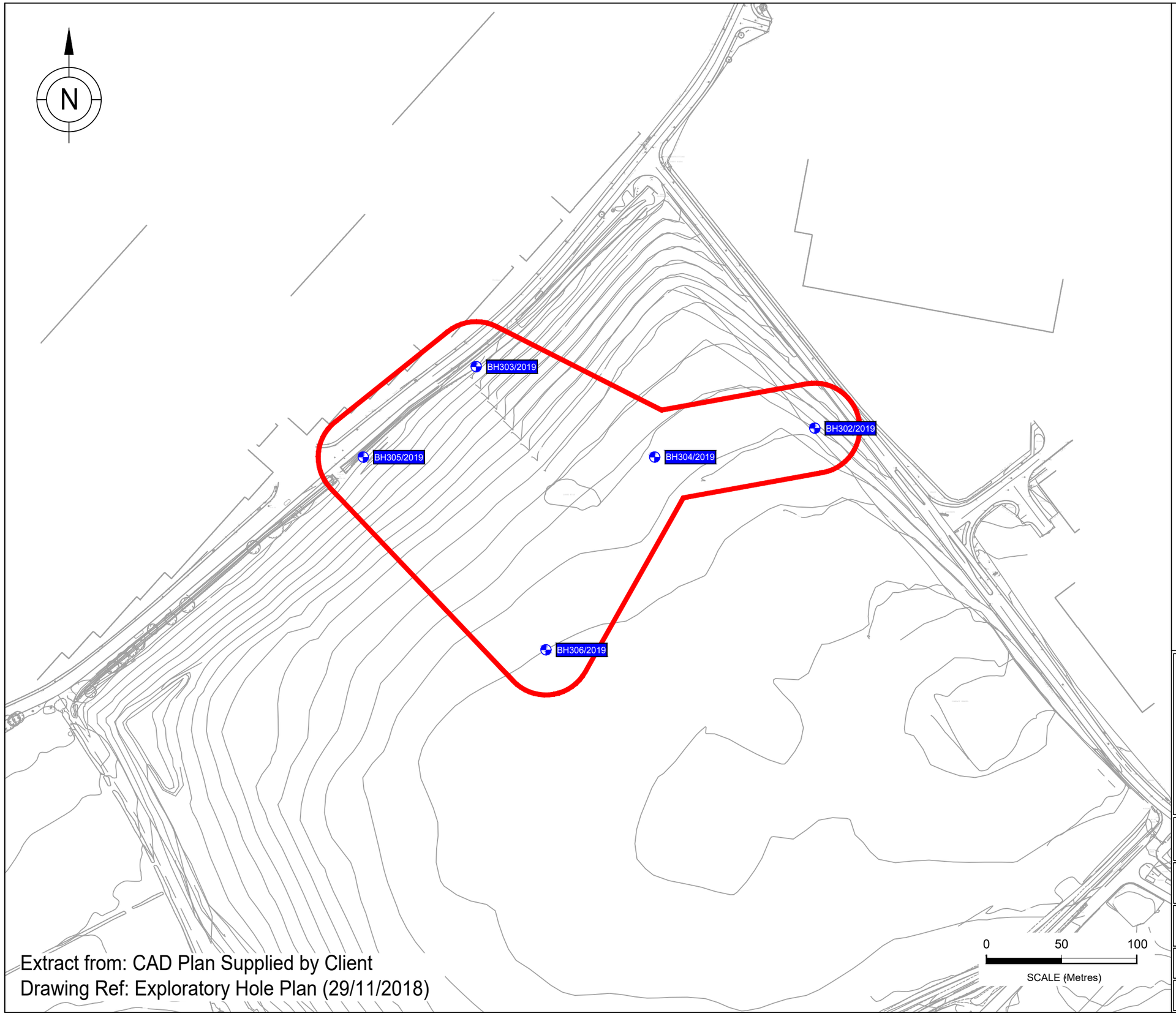
Client: Russells Construction

Site: M62 Junction 19 Link Road, Heywood

Title: Investigation Area Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 19 1015b	See Scale Bar	2	

Drawn By:	Checked By:	Drawn:
AC	PW	Aug 2019



Extract from: CAD Plan Supplied by Client
Drawing Ref: Exploratory Hole Plan (29/11/2018)

KEY

- Investigation Area
- Borehole (BH)

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

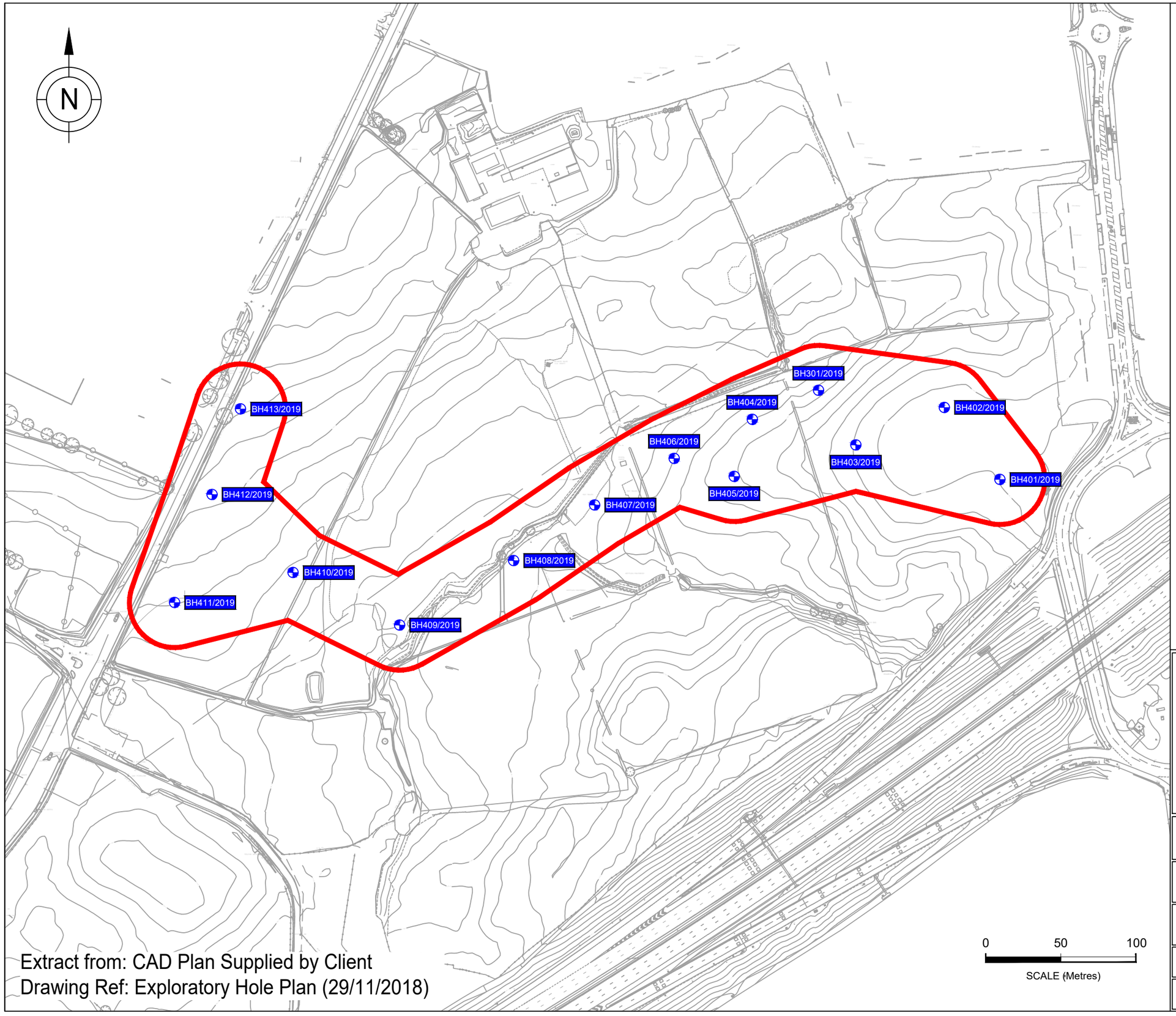
Client: Russells Construction

Site: M62 Junction 19 Link Road, Heywood

Title: Site Investigation Location Plan (Caseys Tip)

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 19 1015b	1:2500 @ A3	3a	

Drawn By:	Checked By:	Drawn:
AC	PW	Aug 2019



Extract from: CAD Plan Supplied by Client
Drawing Ref: Exploratory Hole Plan (29/11/2018)

KEY

- Investigation Area
- Borehole (BH)

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

LK CONSULT LIMITED

Client: Russells Construction

Site: M62 Junction 19 Link Road, Heywood

Title: Site Investigation Location Plan (Collop Gate Farm)

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 19 1015b	1:2500 @ A3	3b	

Drawn By:	Checked By:	Drawn:
AC	PW	Aug 2019

Appendix A

Profile Logs

LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	124.67	Rochdale Borough Council	LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019- 18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.60	ES1 PID=0.5						MADE GROUND: Brown sandy CLAY with frequent rootlets, rare ash and pottery. Sand is fine to coarse.			
						(0.60)				
0.40	D									
0.60	D				124.07	0.60	Soft very sandy silty CLAY. Sand is fine to coarse. (TILL)			
0.60-1.20	ES2 PID=0.3									
1.20-1.65	SPT N=17			1,1/3,3,5,6						
1.20-1.65	BX									
						(2.40)				
2.00-2.45	SPT N=0			1,0/0,0,0,0						
2.00-2.45	BX									
3.00-3.45	SPT N=7			1,1/1,2,2,2	121.67	3.00	Firm brown sandy slightly gravelly silty CLAY with rare coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subrounded of sandstone. (TILL)			
3.00-3.45	BX									
3.00-4.00	ES3									
4.00-4.45	SPT N=8			1,2/2,2,2,2						

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**
Boring Method Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	**Casing Diameter** 200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	**Ground Level (mOD)** 124.67	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019-18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00-4.45	BX									
5.00	B									
5.00-5.45	U No Recovery			20 blows		(4.60)				
6.50-6.95	SPT N=11			1,2/2,3,3,3						
6.50-6.95	BX									
7.60	D				117.07	7.60				
7.60-8.00	ES4						Firm brown very sandy CLAY. Sand is fine to medium. Increasingly sandy with depth. (TILL)			
8.00-8.45	SPT N=9			1,2/2,2,3,2						

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	Logged By
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**
Boring Method Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	**Casing Diameter** 200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	**Ground Level (mOD)** 124.67	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019-18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45	BX			Water strike(1) at 8.00m, rose to 7.50m in 20 mins.		(0.80)			▽1	
8.40	D				116.27	8.40				
8.40-8.90	ES5						Brown silty gravelly SAND with rare coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to round of sandstone. (TILL)			
8.90-9.40	ES6					(1.00)				
9.00	D									
					115.27	9.40				
9.50-9.95	SPT N=20			4,5/5,5,5,5			Firm medium strength brown sandy silty CLAY with rare cobbles of sandstone. Sand is fine to coarse. (TILL)			
9.50-9.95	BX									
10.00-11.00	ES7									
11.00-12.00	B								▼2	
12.00-12.45	SPT N=14			3,3/3,4,4,3						

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	124.67	Rochdale Borough Council	LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019- 18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 4/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
12.00-12.45	X					(5.20)				
12.50-13.50	B									
13.50-13.95	U 90%			13 blows						
13.95	SV 50kPa									
13.95-14.00	D									
14.00-14.60	B									
14.60	ES8			Water strike(2) at 14.60m, rose to 11.60m in 20 mins.	110.07	14.60	Brown clayey very gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of sandstone and mudstone. Blowing and rising up the casing. (TILL)		▽2	
14.60-15.60	B								▼3	
						(1.00)				
15.60-16.00	ES9				109.07	15.60	Stiff medium strength brown sandy silty CLAY with rare sandstone cobbles. Sand is fine to coarse. (TILL)			

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	124.67	Rochdale Borough Council	LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019- 18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 5/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
16.50-16.95 16.50-16.95	SPT N=22 X			3,3/4,6,6,6						
17.50-18.00	B									
18.00-18.45 18.00-19.00	U No Recovery B			15 blows						
19.50-19.95 19.50-19.95	SPT N=19 X			3,4/4,5,5,5						

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	124.67	Rochdale Borough Council	LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019- 18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 6/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00-21.00	B					(10.30)				
21.00-21.45	U 100%			14 blows						
21.45	SV 40kPa									
21.45-21.50	D									
21.50-22.50	B									
22.50-22.95	SPT N=23			3,4/5,6,6,6						
22.50-22.95	X									
23.00-24.00	B									

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 27.91mbgl. Rotary core follow on from 28.00mbgl to 38.00mbgl.	200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	124.67	Rochdale Borough Council	LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019- 18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 7/10

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
24.00-24.45	U 80%			16 blows						
24.45	SV 50kPa									
25.50-25.95 25.50-25.95 25.50-25.95	SPT N=31 B X			3,4/6,6,9,10						
				Water strike(3) at 25.95m, rose to 15.00m in 20 mins.	98.77	25.90 (0.90)	Grey clayey sandy GRAVEL. Sand fine to coarse. Gravel is fine to coarse, subangular of sandstone and mudstone. (TILL)		▽3	
					97.87	26.80 (0.60)	Very dense brown gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone. (TILL)			
27.00-27.28 27.00-27.45	SPT 25*/100 50/180 X			16,9/22,16,12						
					97.27	27.40 (0.51)	Very weak black shaley MUDSTONE. Weathered. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
27.50-27.91 27.50-27.95	SPT 50/260 X			10,10/9,11,16,14						
					96.76	27.91	NO RECOVERY.			
28.00										

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**
Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m **Location** 386166 E 408994 N	**Ground Level (mOD)** 124.67 **Dates** 14/06/2019- 18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 8/10

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						96.67	(0.09) 28.00	Dark grey weathered MUDSTONE recovered as a clayey GRAVEL. Residual soil. (PENNINE LOWER COAL MEASURES) Cable hole cleaned via open hole drilling to 28.00mbgl. Rotary coring starts at 28.00mbgl.			
							(0.40)				
	95	40	0	NI		96.27	28.40	Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES) Subvertical planar rough partially closed fracture with sparry calcite infill with druzy texture from 28.40-29.10mbgl.			
29.00											
				9				Subvertical planar rough open fracture with no infill from 29.35-29.90mbgl.			
							(2.27)				
30.00											
	100	95	73	6		94.00	30.67				
						93.98	30.69	Weak thinly laminated black MUDSTONE/SHALE. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
31.00								Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES) 60 degrees planar rough partially closed fracture no infilling from 30.89-31.04mbgl. Potentially opened by drilling.			
				5							
							(2.47)				
32.00											

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**
Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m **Location** 386166 E 408994 N	**Ground Level (mOD)** 124.67 **Dates** 14/06/2019-18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 9/10

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
				6				Subvertical undulating rough open fracture with no infilling from 32.28-32.94mbgl.			
33.00								Subvertical stepped rough open fracture with no infilling from 32.95-33.28mbgl.			
						91.51	33.16 (0.08)				
						91.43	33.24	Weak dark grey thinly laminated friable SHALE. Highly weathered. (PENNINE LOWER COAL MEASURES)			
	100	95	77	10				Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES)			
34.00							(1.76)	60 degrees planar rough open fracture with no infilling from 34.00-34.07mbgl, 40 degrees planar smooth open fracture with no infilling from 34.14-34.24mbgl. 55 degrees planar smooth open fracture with no infilling from 34.17-34.26mbgl. 15 degrees planar smooth open fracture with no infilling from 34.27-34.30mbgl.			
				11							
35.00						89.67	35.00	NO RECOVERY.			
							(0.30)				
						89.37	35.30	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
							(0.20)				
				6		89.17	35.50	Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES) Subvertical stepped smooth open fracture with no infilling from 35.60-36.00mbgl.			
36.00											

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH301**
Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 200mm cased to 10.50m 150mm cased to 24.50m 127mm cased to 30.00m	**Ground Level (mOD)** 124.67	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386166 E 408994 N	**Dates** 14/06/2019-18/06/2019	**Project Contractor** D&I Drilling	**Sheet** 10/10

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
							(1.19)	Subvertical undulating smooth open fracture with no infilling from 36.26-38.00mbgl. Stepped by 37.00mbgl. Fracture closed with calcite infill with druzy texture from 37.92-38.00mbgl. 30 degrees undulating smooth open fracture with no infilling from 36.27-36.32mbgl.			
	90	83	43	11		87.98	36.69				
						87.96	36.71 (0.11)	Weak thinly laminated black MUDSTONE/SHALE. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						87.85	36.82 (0.13)				
						87.72	36.95 (0.05)	Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES)			
37.00						87.67	37.00				
							(0.45)	Weak thinly laminated black MUDSTONE/SHALE. Highly weathered. (PENNINE LOWER COAL MEASURES)			
				7		87.22	37.45	Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES)			
							(0.45)	Weak thinly laminated black MUDSTONE/SHALE. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						86.77	37.90 (0.10)	Weak thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light with increasing calcite content with depth. Highly weathered. (PENNINE LOWER COAL MEASURES)			
38.00						86.67	38.00				
								Medium strong thinly laminated grey and black MUDSTONE with occasional mica, plant fragments and shell fragments. Dip 10-15 degrees. Interbedded dark and light. Slightly weathered. (PENNINE LOWER COAL MEASURES)			
								Complete at 38.00m			

Remarks
Chiselling from 27.00-27.10mbgl.
Chiselling from 27.10-27.50mbgl.
Terminated at 38.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH301

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.40mbgl. Rotary core follow on from 15.00mbgl to 20.00mbgl.	150mm cased to 13.00m 127mm cased to 15.00m	128.22	Rochdale Borough Council	LKC 19 1015
	Location 384676.9 E 409488.1 N	**Dates** 19/06/2019- 20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50 0.00-0.60	B ES1 PID=0.0					(0.60)	MADE GROUND: Brown sandy gravelly CLAY with frequent rootlets, occasional pottery, brick fragments and coal. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
0.60-1.00 0.60-1.20	B ES2 PID=0.2				127.62	0.60	MADE GROUND: Dense grey and orange brown clayey sandy GRAVEL with occasional cobbles of sandstone. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandtsone.			
1.20-1.65 1.20-1.65 1.20-2.00	SPT N=36 BX ES3 PID=0.1			1,3/4,6,6,20		(1.40)				
2.00-2.45 2.00-2.45 2.00-3.00	SPT N=2 B ES4			1,1/0,0,1,1	126.22	2.00	MADE GROUND: Soft to firm black organic sandy gravelly CLAY with occasional brick fragments, pottery and organic matter. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone and slate.			
3.00-3.45 3.00-3.45 3.00-4.00	SPT N=14 B ES5			1,3/7,1,1,5		(3.00)				
4.00-4.45	SPT N=9			4,3/2,2,2,3						

Remarks
Chiselling from 13.70-14.00mbgl.
Chiselling from 14.00-14.40mbgl.
Terminated at 20.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH302

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.40mbgl. Rotary core follow on from 15.00mbgl to 20.00mbgl.	150mm cased to 13.00m 127mm cased to 15.00m	128.22	Rochdale Borough Council	LKC 19 1015
	Location 384676.9 E 409488.1 N	**Dates** 19/06/2019- 20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00-4.45 4.00-5.00	BX ES6									
5.00-5.45 5.00-5.45 5.00-6.00	SPT N=9 BX ES7			3,3/2,2,3,2	123.22	5.00	Firm to stiff consistency brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone. (TILL)			
6.50-6.95 6.50-6.95	SPT N=35 BX			3,4/6,6,10,13						
7.00-7.50	B			Water strike(1) at 7.00m.					▽1	
8.00-8.45	SPT N=32			6,7/8,8,8,8						

Remarks
Chiselling from 13.70-14.00mbgl.
Chiselling from 14.00-14.40mbgl.
Terminated at 20.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.40mbgl. Rotary core follow on from 15.00mbgl to 20.00mbgl.	150mm cased to 13.00m 127mm cased to 15.00m	128.22	Rochdale Borough Council	LKC 19 1015
	Location 384676.9 E 409488.1 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45	BX100									
						(8.70)				
9.50-9.95	SPT N=29			2,2/4,4,8,13						
9.50-9.95	BX									
11.00-11.45	SPT N=35			12,11/7,8,8,12						
11.00-11.45	BX									

Remarks
Chiselling from 13.70-14.00mbgl.
Chiselling from 14.00-14.40mbgl.
Terminated at 20.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.40mbgl. Rotary core follow on from 15.00mbgl to 20.00mbgl.	150mm cased to 13.00m 127mm cased to 15.00m	128.22	Rochdale Borough Council	LKC 19 1015
	Location 384676.9 E 409488.1 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 4/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
12.50-12.95 12.50-12.95	BX SPT N=30			4,7/7,7,8,8						
13.70-14.00	B				114.52	13.70	Very weak grey MUDSTONE. Highly weathered. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
14.00-14.40 14.00-14.30 14.00-14.45	ES8 SPT 50/145 BX			9,16/24,26		(0.70)				
14.40-14.85 14.40-14.65	X SPT 25*/115 50/135			11,14/25,25	113.82	14.40	NO RECOVERY.			
						(0.60)				
	TCR / **SCR** / **RQD** / **FI**									
15.00					113.22	15.00	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						(0.20)				
					113.02	15.20	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
						(0.10)				
					112.92	15.30	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						(0.16)				
	100 / 64 / 0 / NI				112.76	15.46	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
						(0.54)				
16.00										

Remarks
Chiselling from 13.70-14.00mbgl.
Chiselling from 14.00-14.40mbgl.
Terminated at 20.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH302

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**
Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 150mm cased to 13.00m 127mm cased to 15.00m **Location** 384676.9 E 409488.1 N	**Ground Level (mOD)** 128.22 **Dates** 19/06/2019-20/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 5/6

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						112.22	16.00				
							(0.26)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						111.96	16.26				
							(0.19)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
	100	68	0	NI		111.77	16.45				
						111.71	(0.06) 16.51				
							(0.07)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						111.64	16.58				
							(0.18)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
						111.46	16.76				
							(0.16)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						111.30	16.92				
							(0.08)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
17.00						111.22	17.00				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
	100	100	10	NI				Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
							(1.23)				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) Subvertical undulating smooth open fracture with no infill from 17.12-17.32mbgl. 60 degrees undulating smooth open fracture with calcite infill (<1mm) from 15.38-15.51mbgl. Likely opened by drilling. Several 60 degrees undulating closed fractures with calcite infill (<1mm) from 17.70-17.86mbgl. 50 degrees undulating smooth open fracture with no infill from 17.90-18.00mbgl. 50 degrees planar closed fracture with no infill from 18.00-18.06mbgl. Several subvertical undulating closed fractures with calcite infill (<1mm) from 18.00-18.23mbgl. 50 degrees planar closed fracture with no infill from 18.17-18.23mbgl.			
18.00						109.99	18.23				
							(0.27)				
	100	73	26	NI		109.72	18.50				
							(0.50)				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
19.00						109.22	19.00				
							(0.30)	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) 30 degrees planar smooth open fracture with no infill from 18.52-18.54mbgl. Possibly drilling induced. 30 degrees planar smooth open fracture with no infill from 18.70-18.72mbgl. Possibly drilling induced. 30 degrees planar smooth open fracture with no infill from 18.73-18.75mbgl. Possibly drilling induced. 60 degrees stepped rough open fracture with no infill from 18.73-18.82mbgl. 30 degrees planar smooth open fracture with no infill from 18.91-18.93mbgl. Possibly drilling induced.			
	100	100	53	15			(0.70)				
20.00								Very weak thinly laminated grey shaley			

Remarks
Chiselling from 13.70-14.00mbgl.
Chiselling from 14.00-14.40mbgl.
Terminated at 20.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH302

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH302**

Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 150mm cased to 13.00m 127mm cased to 15.00m	**Ground Level (mOD)** 128.22	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 384676.9 E 409488.1 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 6/6

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						108.92	19.30	MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) 50 degrees planar rough open fracture with no infill from 19.28-19.33mbgl.			
						108.22	20.00	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 30 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) 60 degrees undulating rough open fracture with no infill from 19.31-19.43mbgl. 30 degrees planar smooth open fracture with no infill from 19.43-19.46mbgl. Possibly drilling induced. Horizontal planar smooth open fracture with no infill at 19.56mbgl. Possibly drilling induced. 50 degrees planar rough open fracture with no infill from 19.56-19.63mbgl. Subvertical undulating smooth open fracture with no infill from 19.17-19.87mbgl. Subvertical undulating smooth open fracture with no infill from 19.88-20.00mbgl.			
								Complete at 20.00m			

Remarks	**Scale (approx)**	**Logged By**
	1:20	PW
	Figure No.	
	LKC 19 1015.BH302	

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH303**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 8.89mbgl. Rotary core follow on from 13.00mbgl to 18.00mbgl.	127mm cased to 13.00m	116.77	Rochdale Borough Council	LKC 19 1015
	Location 384450.9 E 409528.4 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	ES1 PID=0.3						MADE GROUND: Dark brown sandy silty CLAY with frequent rootlets and rare brick fragments. Sand is fine to coarse.			
						(0.80)				
0.50-0.80	ES2 PID=0.3									
0.80-1.20	ES3 PID=0.2				115.97	0.80	Firm medium strength orange brown very sandy gravely CLAY with occasional coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone and shale. (TILL)			
1.20-1.65 1.20 1.20-1.65	SPT N=10 SV 50kPa X			2,6/3,3,2,2						
						(1.40)				
1.50-2.00	B4									
2.00 2.00-2.45	SV 40kPa X			Water strike(1) at 2.00m, no rise after 20 mins.					▼1	
2.00-2.45 2.20-3.00 2.20-3.00	SPT N=16 B5 ES5			3,4/4,4,4,4	114.57	2.20	Medium dense brown gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, subrounded of sandstone. (TILL)			
						(1.50)				
3.00-3.45 3.00-3.45	SPT N=20 X			5,7/8,4,4,4						
3.70-4.00	ES6				113.07	3.70	Firm to stiff medium to high strength brown sandy silty CLAY with rare coal fragments and sand lenses. Sand is fine to coarse. Decreasingly sandy with depth. (TILL)			
4.00-4.45	SPT N=22			4,5/6,6,5,5						

Remarks
No RQD between 13.00-15.00mbgl as, although there are solid sections of core with no fractures present, these are weathered to clay.
Terminated at 18.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH303

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Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 8.89mbgl. Rotary core follow on from 13.00mbgl to 18.00mbgl.	127mm cased to 13.00m	116.77	Rochdale Borough Council	LKC 19 1015
	Location 384450.9 E 409528.4 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00	SV 50kPa									
4.00-4.45	X									
4.00-4.50	ES7									
4.50-5.00	B8									
5.00-5.45	SPT N=33			5,7/7,8,9,9						
5.00	SV 130kPa									
5.00-5.45	X									
5.00-6.00	B9									
						(4.30)				
6.00-6.45	SPT N=42			11,12/12,12,8,10						
6.00-6.45	X									
7.00-7.45	SPT N=38			6,8/8,8,8,14						
7.00-7.45	X									
8.00-8.45	SPT N=32			4,4/6,7,8,11						

Remarks
No RQD between 13.00-15.00mbgl as, although there are solid sections of core with no fractures present, these are weathered to clay.
Terminated at 18.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH303

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH303**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 8.89mbgl. Rotary core follow on from 13.00mbgl to 18.00mbgl.	127mm cased to 13.00m	116.77	Rochdale Borough Council	LKC 19 1015
	Location 384450.9 E 409528.4 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45 8.00-8.50	X B10				108.77	8.00	Stiff friable grey gravelly CLAY. Gravel is fine to coarse, subangular of mudstone. Completely weathered mudstone. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
8.50-8.89 8.50-8.95	SPT 50/240 X			11,12/13,13,17,7		(0.89)				
					107.88	8.89	NO RECOVERY.			
						(4.11)				

Remarks
No RQD between 13.00-15.00mbgl as, although there are solid sections of core with no fractures present, these are weathered to clay.
Terminated at 18.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH303**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 8.89mbgl. Rotary core follow on from 13.00mbgl to 18.00mbgl.	127mm cased to 13.00m	116.77	Rochdale Borough Council	LKC 19 1015
	Location 384450.9 E 409528.4 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 4/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
	TCR / SCR / RQD / FI									
13.00	100 / 90 / 0 / NI				103.77	13.00 (0.80)	Extremely weak thinly laminated grey MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
					102.97	13.80	Very weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Highly weathered. (PENNINE LOWER COAL MEASURES)			
14.00	100 / 80 / 0 / NI					(0.68)	30 degrees planar smooth open fracture with no infill from 14.20-14.23mbgl. 30 degrees planar smooth open fracture with no infill from 14.24-14.48mbgl. 30 degrees planar smooth open fracture with no infill from 14.26-14.29mbgl. 60 degrees stepped rough open fracture with no infill from 14.29-14.41mbgl. 10 degrees undulating smooth open fracture with no infill from 14.38-14.39mbgl.			
					102.29	14.48 (0.42)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES) Subvertical stepped rough open fracture with no infill from 14.77-14.95mbgl.			
15.00	100 / 75 / 32 / NI				101.87	14.90 (0.46)	Very weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Highly weathered. (PENNINE LOWER COAL MEASURES) Several bedding parallel planar smooth open fractures with no infill from 15.20-15.34mbgl. Possibly drilling induced.			
					101.41	15.36 (0.54)	Weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Slightly weathered. (PENNINE LOWER COAL MEASURES) Bedding parallel 20 degrees planar smooth open fracture with no infill from 15.45-15.46mbgl. Possibly drilling induced. Subvertical stepped smooth open fracture with no infill from 15.58-15.75mbgl. 40 degrees planar smooth open fracture with no infill from 15.72-15.79mbgl.			
16.00					100.87	15.90				

Remarks
No RQD between 13.00-15.00mbgl as, although there are solid sections of core with no fractures present, these are weathered to clay.
Terminated at 18.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH303

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH303**
Machine : **Flush :** **Core Dia :** mm **Method :** Drive-in Windowless Sampler	**Casing Diameter** 127mm cased to 13.00m **Location** 384450.9 E 409528.4 N	**Ground Level (mOD)** 116.77 **Dates** 21/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 5/5

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
							(0.16)				
						100.71	16.06	Very weak thinly laminated grey MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
							(0.15)				
						100.56	16.21	Weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Slightly weathered. (PENNINE LOWER COAL MEASURES) 20 degrees planar smooth open fracture with no infill from 16.13-16.15mbgl. 10 degrees planar smooth open fracture with no infill from 16.18-16.20mbgl.			
							(0.19)				
						100.37	16.40				
	100	80	50	NI							
							(0.45)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						99.92	16.85	Weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Slightly weathered. (PENNINE LOWER COAL MEASURES) Subvertical undulating smooth open fracture with no infill from 16.45-16.70mbgl. 20 degrees planar smooth open fracture with no infill from 16.46-16.50mbgl. Subvertical undulating smooth open fracture with no infill from 16.51-16.69mbgl. Subvertical undulating smooth open fracture with no infill from 16.57-16.85mbgl. Subvertical undulating smooth open fracture with no infill from 16.72-16.85mbgl.			
							(0.15)				
17.00						99.77	17.00				
							(0.40)				
	100	100	20	NI		99.37	17.40				
							(0.17)				
						99.20	17.57	Very weak thinly laminated grey MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
							(0.33)	Weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Slightly weathered. (PENNINE LOWER COAL MEASURES) 40 degrees planar smooth open fracture with no infill from 17.00-17.06mbgl. 30 degrees stepped rough open fracture with no infill from 17.06-17.09mbgl. Subvertical undulating smooth open fracture with no infill from 17.08-17.40mbgl. 10 degrees planar smooth open fracture with no infill from 17.09-17.10mbgl. 10 degrees planar smooth open fracture with no infill from 17.24-17.25mbgl. 20 degrees planar smooth open fracture with no infill from 17.26-17.28mbgl. Horizontal planar smooth open fracture with no infill at 17.30mbgl.			
						98.87	17.90				
							(0.10)				
18.00						98.77	18.00				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES) Two parallel subvertical undulating smooth open fracture with no infill from 17.55-18.00mbgl. Several bedding parallel planar smooth open fractures with no infill from 17.55-15.62mbgl. Possibly drilling induced.			
								Weak thinly laminated grey MUDSTONE with rare mica. Dip of 20 degrees. Slightly weathered. (PENNINE LOWER COAL MEASURES)			
								Very weak thinly laminated grey MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
								Complete at 18.00m			

Remarks
No RQD between 13.00-15.00mbgl as, although there are solid sections of core with no fractures present, these are weathered to clay.
Terminated at 18.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH303

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH304**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.45mbgl. Rotary core follow on from 14.50mbgl to 23.00mbgl.	150mm cased to 14.00m 127mm cased to 20.00m	128.19	Rochdale Borough Council	LKC 19 1015
	Location	**Dates**	**Project Contractor**	**Sheet**
	384569.2 E 409468.9 N	20/06/2019- 21/06/2019	D&I Drilling	1/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	ES1 PID=0.0						MADE GROUND: Soft extremely low to very low strength brown sandy gravelly CLAY with frequent rootlets, occasional brick fragments, organic inclusions, rare ash, coal and plastic. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
0.50	D									
0.50-1.20	ES2									
1.20-1.65	SPT N=16			2,3/3,3,5,5						
1.20-1.65	BX									
1.20-2.00	ES3 PID=0.1									
2.00-2.45	SPT N=12			2,2/2,2,5,3						
2.00-2.45	BX									
2.00-3.00	ES4									
3.00-3.45	SPT N=8			1,1/2,2,2,2						
3.00-3.45	BX									
3.00-4.00	ES5 PID=0.1					(6.50)				
4.00-4.45	SPT N=10			3,3/3,3,2,2						

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH304

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH304**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.45mbgl. Rotary core follow on from 14.50mbgl to 23.00mbgl.	150mm cased to 14.00m 127mm cased to 20.00m	128.19	Rochdale Borough Council	LKC 19 1015
	Location 384569.2 E 409468.9 N	**Dates** 20/06/2019- 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00-4.45 4.00-5.00	BX ES6									
5.00-5.45 5.00-5.45 5.00-6.00	SPT N=9 BX ES7			2,2/2,2,3,2						
6.50-6.95 6.50 6.50-6.95 6.50-7.10	SPT N=10 D BX ES8			2,2/2,2,3,3	121.69	6.50 (0.60)	Soft to firm brown and grey mottled very sandy slightly gravely CLAY with rare coal fragments and rootlets. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone and shale. (TILL)			
7.10 7.10-8.00	D ES9				121.09	7.10	Firm high strength brown very sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to round of sandstone and shale. (TILL)			

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	**Logged By**
1:20	PW

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Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.45mbgl. Rotary core follow on from 14.50mbgl to 23.00mbgl.	150mm cased to 14.00m 127mm cased to 20.00m	128.19	Rochdale Borough Council	LKC 19 1015
	Location 384569.2 E 409468.9 N	**Dates** 20/06/2019- 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45	UD 100%			61 blows						
8.45	SV 80kPa					(3.40)				
9.50-9.95 9.50-9.95	SPT N=21 BX			3,3/5,4,5,7					▼1	
10.50-11.50	ES10			Water strike(1) at 10.50m, rose to 10.10m in 20 mins.	117.69	10.50	Medium dense brown sandy clayey GRAVEL. Sand is fine to coarse. Gravel is fine to coarse (predominantly coarse), subrounded to rounded of quartz and sandstone. Increasingly sandy with depth. Slight hydrogen sulphide odour. (TILL)		▽1	
11.00-11.45 11.00 11.00-11.45	SPT N=28 D B			6,6/7,8,7,6		(1.10)				
11.60	D				116.59	11.60	Brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of quartz and sandstone. (TILL)			
						(0.60)				

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	**Logged By**
1:20	PW

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH304**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 14.45mbgl. Rotary core follow on from 14.50mbgl to 23.00mbgl.	150mm cased to 14.00m 127mm cased to 20.00m	128.19	Rochdale Borough Council	LKC 19 1015
	Location 384569.2 E 409468.9 N	**Dates** 20/06/2019- 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 4/6

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
12.20	D				115.99	12.20	Firm to stiff brown sandy CLAY. Sand is fine to coarse. (TILL)			
12.50-12.95 12.50-12.91	BX SPT 50/255			5,7/10,12,14,14		(1.80)				
14.00-14.45 14.00-14.45	X SPT 50/295			3,8/11,12,16,11	114.19	14.00	BOULDER of dark grey MUDSTONE. (TILL)			
						(0.45)				
	TCR **SCR**	**RQD**	**FI**		113.74	14.45	Stiff brown slightly sandy gravelly CLAY with occasional cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subround of sandstone, mudstone and shale. (TILL)			
14.50	100									
15.50						(2.28)				

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	**Logged By**
1:20	PW

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH304**
Machine : **Flush :** **Core Dia :** mm **Method :** Cable Percussion	**Casing Diameter** 150mm cased to 14.00m 127mm cased to 20.00m **Location** 384569.2 E 409468.9 N	**Ground Level (mOD)** 128.19 **Dates** 20/06/2019-21/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 5/6

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
	100					111.46	16.73	BOULDER of grey MUDSTONE. Bedding at 60 degrees. (TILL)			
							(0.27)				
17.00						111.19	17.00	Stiff brown slightly sandy gravelly CLAY with occasional cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to subround of sandstone, mudstone and shale. (TILL)			
							(0.80)				
	73					110.39	17.80	Extremely weak thinly laminated grey shaley MUDSTONE recovered as soft gravelly CLAY. Residual soil. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
							(0.30)				
						110.09	18.10	NO RECOVERY.			
							(0.40)				
18.50						109.69	18.50				
						109.63	(0.06) 18.56	Extremely weak thinly laminated grey shaley MUDSTONE recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
							(0.40)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						109.23	18.96				
	50	38	10	NI		109.19	19.00	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
							(0.50)	NO RECOVERY.			
19.50						108.69	19.50	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
							(0.34)				
						108.35	19.84	NO RECOVERY.			
20.00							(0.16)				

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	Logged By
1:20	PW

Figure No.
LKC 19 1015.BH304

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH304**
Machine : **Flush :** **Core Dia :** mm **Method :** Cable Percussion	**Casing Diameter** 150mm cased to 14.00m 127mm cased to 20.00m **Location** 384569.2 E 409468.9 N	**Ground Level (mOD)** 128.19 **Dates** 20/06/2019-21/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 6/6

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						108.19	20.00	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
							(0.30)				
						107.89	20.30	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) Horizontal planar smooth open fracture with fine gravel infill at 20.36mbgl. Possibly drilling induced. Several 45 degrees planar closed fractures with no infill from 20.40-20.56mbgl. Horizontal planar smooth open fracture with fine gravel infill at 20.56mbgl. Possibly drilling induced. Horizontal planar smooth open fracture with fine gravel infill at 20.61mbgl. Possibly drilling induced.			
	100	60	28	NI			(0.70)				
21.00						107.19	21.00	Subvertical stepped closed fracture with no infill from 20.68-20.86mbgl.			
							(0.15)				
						107.04	21.15	15 degrees planar smooth open fracture with no infill from 20.90-20.92mbgl. Possibly drilling induced.			
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
	100	83	35	NI			(0.85)	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) Subvertical stepped smooth open fracture with discontinuous calcite infill (<1mm) from 21.15-21.95mbgl. 5no. 10 degrees planar smooth open fracture with no infill between 21.15-21.37mbgl. Possibly drilling induced.			
22.00						106.19	22.00	25 degrees planar smooth open fracture with no infill from 21.43-21.45mbgl.			
							(0.10)				
						106.09	22.10	Horizontal planar smooth open fracture with no infill at 21.47mbgl. 10 degrees planar smooth open fracture with no infill from 21.48-21.49mbgl. 10 degrees planar smooth open fracture with no infill from 21.59-21.60mbgl. 10 degrees planar smooth open fracture with no infill from 21.79-21.80mbgl. Horizontal planar smooth open fracture with no infill at 21.95mbgl.			
	100	90	45	NI			(0.90)				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
23.00						105.19	23.00	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) Horizontal planar smooth open fracture with no infill at 22.30mbgl. Subvertical undulating rough open fracture from 22.30-22.50mbgl. 10 degrees planar smooth open fracture with no infill from 22.34-22.35mbgl. 10 degrees planar smooth open fracture with no infill from 22.42-22.43mbgl. 10 degrees planar smooth open fracture with no infill from 22.45-22.46mbgl. Horizontal planar smooth open fracture with no infill at 22.49mbgl. 20 degrees planar smooth open fracture with no infill from 22.64-22.66mbgl. 10 degrees planar smooth open fracture with no infill from 22.73-22.74mbgl. Subvertical undulating smooth open fracture with no infill from 22.76-23.00mbgl. Horizontal planar smooth open fracture at 22.84mbgl.			

Remarks
Terminated at 23.00mbgl by AECOM engineer.
Chiselling from 13.00-14.00mbgl.
Casing advanced from 19.50-20.00mbgl to reduce loss of flush and increase core recovery.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH304

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH305**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 7.86mbgl. Rotary core follow on from 11.00mbgl to 16.00mbgl.	127mm cased to 11.00m	115.81	Rochdale Borough Council	LKC 19 1015
	Location 384375.2 E 409468.9 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	ES1 PID=0.4					(0.50)	MADE GROUND: Soft dark brown sandy gravelly silty CLAY with frequent rootlets, rare pottery and brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
0.30-0.50	ES2 PID=0.3									
0.50-1.20	B3				115.31	0.50				
0.50-1.20	ES3 PID=0.3						Firm to stiff medium strength orange and grey mottled sandy gravely CLAY with occasional rootlets and coal fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone (TILL)			
1.20-1.65	SPT N=9			2,2/3,2,2,2						
1.20	SV 70kPa									
1.20-1.65	X									
1.50-2.00	B4					(1.90)				
2.00-2.45	SPT N=23			3,4/5,6,6,6						
2.00	SV 60kPa									
2.00-2.45	X									
2.40-3.00	B5				113.41	2.40				
2.40-3.00	ES5						Medium dense to dense brown gravelly SAND. Sand is fine to coarse (predominantly coarse). Gravel is fine to coarse, subrounded of sandstone and mudstone. (TILL)			
3.00-3.45	SPT N=36			7,8/8,9,9,10						
3.00-3.45	X									
3.00-4.00	B6									
4.00-4.45	SPT N=28			6,6/7,7,7,7						

Remarks
Terminated at 16.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH305

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH305**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 7.86mbgl. Rotary core follow on from 11.00mbgl to 16.00mbgl.	127mm cased to 11.00m	115.81	Rochdale Borough Council	LKC 19 1015
	Location 384375.2 E 409468.9 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00-4.45 4.00-5.00	X B7						At 4.00mbgl the sand rises within the casing to 3.50mbgl.			
5.00-5.45 5.00-5.45	SPT 50/295 X			10,10/12,13,14,11		(5.46)				
5.50-5.95 5.50-5.95	SPT N=45 X			12,11/10,11,11,13						
6.00-6.35 6.00-6.45	SPT 25*/145 50/200 X			13,12/14,15,21						
7.00-7.45 7.00-7.45	SPT N=44 X			11,11/12,10,10,12						
7.50-7.86 7.50-7.95	SPT 25*/140 50/220 X			13,12/14,17,19						
					107.95	7.86	NO RECOVERY.			

Remarks
Terminated at 16.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
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Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH305**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Window sample borehole undertaken to 7.86mbgl. Rotary core follow on from 11.00mbgl to 16.00mbgl.	127mm cased to 11.00m	115.81	Rochdale Borough Council	LKC 19 1015
	Location 384375.2 E 409468.9 N	**Dates** 21/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						(3.14)				
	TCR / SCR / RQD / FI									
11.00					104.81	11.00				
						(0.27)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
					104.54	11.27				
						(0.22)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
					104.32	11.49				
	100 / 75 / 10 / NI					(0.41)	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) Several crossing subhorizontal stepped smooth open fractures between 11.50-11.54mbgl. 25 degrees stepped rough open fracture with no infill from 11.58-11.61mbgl. 45 degrees stepped rough open fracture with			

Remarks
Terminated at 16.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH305

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH305**

Machine :	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Flush :	127mm cased to 11.00m	115.81	Rochdale Borough Council	LKC 19 1015
Core Dia : mm	**Location**	**Dates**	**Project Contractor**	**Sheet**
Method : Drive-in Windowless Sampler	384375.2 E 409468.9 N	21/06/2019	D&I Drilling	4/5

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						103.91	(0.30)	no infill from 11.67-11.76mbgl. Subvertical stepped rough open fracture with no infill from 11.75-11.92mbgl. 80 degrees planar smooth open fracture with no infill from 11.78-11.92mbgl. Several 10 degrees bedding parallel planar smooth open fractures with no infill between 11.80-11.90mbgl. Possibly drilling induced.			
						103.61	12.20				
							(0.46)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
12.50						103.15	12.66				
							(0.14)	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
						103.01	12.80				
							(0.16)	Two subvertical undulating smooth open fractures with no infill from 12.20-12.40mbgl. 25 degrees planar smooth open fracture with no infill from 12.21-12.24mbgl. 25 degrees planar smooth open fracture with no infill from 12.24-12.27mbgl. 10 degrees bedding parallel planar smooth open fracture with no infill from 12.40-12.41mbgl. Possibly drilling induced. 10 degrees bedding parallel planar smooth open fracture with no infill from 12.57-12.58mbgl. Possibly drilling induced. 50 degrees stepped rough open fracture with no infill from 12.59-12.65mbgl.			
						102.85	12.96				
	100	81	8	NI			(0.48)				
						102.37	13.44				
							(0.29)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						102.08	13.73				
								Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
14.00								Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Interbedded dark and light with light laminations containing higher calcite content. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
							(1.14)	10 degrees bedding parallel planar smooth open fracture with no infill from 13.04-13.05mbgl. Possibly drilling induced. 10 degrees bedding parallel planar smooth open fracture with no infill from 13.11-13.12mbgl. Possibly drilling induced. Subvertical stepped rough open fracture with occasional discontinuous calcite infill (<1mm) from 13.12-13.22mbgl. Subvertical stepped rough open fracture with occasional discontinuous calcite infill (<1mm) from 13.12-13.40mbgl. 10no. 10 degrees bedding parallel planar smooth open fractures with no infill between 13.19-13.96mbgl. Possibly drilling induced. 50 degrees planar smooth closed fracture with calcite infill (<2mm) from 13.39-13.47mbgl.			
	100	87	35	NI			(0.13)				
							(0.20)				
							(0.10)	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES) Subvertical undulating rough open fracture from 13.46-13.59mbgl.			
							(0.35)	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Interbedded dark and light with light laminations containing higher calcite content. Moderately weathered. (PENNINE LOWER COAL MEASURES) Subvertical undulating rough open fracture from 13.86-13.97mbgl. 60 degrees stepped rough open fracture with no infill from 14.00-14.05mbgl. 10 degrees planar smooth open fracture with			
							(0.11)				
							(0.10)				
16.00							(0.10)				

Remarks
Terminated at 16.00mbgl by AECOM engineer.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH305**

Machine :	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Flush :	127mm cased to 11.00m	115.81	Rochdale Borough Council	LKC 19 1015
Core Dia : mm	**Location**	**Dates**	**Project Contractor**	**Sheet**
Method : Drive-in Windowless Sampler	384375.2 E 409468.9 N	21/06/2019	D&I Drilling	5/5

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						100.94	14.87	no infill from 14.05-14.06mbgl. 60 degrees planar rough open fracture with no infill from 14.10-14.19mbgl. 10 degrees planar smooth open fracture with no infill from 14.13-14.14mbgl. 10 degrees planar smooth open fracture with no infill from 14.29-14.30mbgl. 10 degrees planar smooth open fracture with no infill from 14.39-14.40mbgl. Subvertical undulating closed fracture with no infill from 14.53-14.56mbgl. 10 degrees planar smooth open fracture with no infill from 14.65-14.66mbgl. 40 degrees planar closed fracture with no infill from 14.85-14.90mbgl. Competent rock above the fracture but weathered to clay beneath.			
						100.81	15.00	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
						100.61	15.20	Weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Interbedded dark and light with light laminations containing higher calcite content. Moderately weathered. (PENNINE LOWER COAL MEASURES) 60 degrees undulating rough open fracture with no infill from 15.04-15.13mbgl. 10 degrees planar smooth open fracture with no infill from 15.15-15.16mbgl. Possibly drilling induced.			
						100.51	15.30	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						100.16	15.65	Very weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Interbedded dark and light with light laminations containing higher calcite content. Moderately weathered. (PENNINE LOWER COAL MEASURES) Subvertical undulating open fracture with no infill from 15.30-15.63mbgl. 10 degrees planar smooth open fracture with no infill from 15.36-15.37mbgl. Possibly drilling induced. Subvertical undulating open fracture with no infill from 15.60-15.90mbgl.			
						100.12	15.69	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						100.01	15.80	Very weak thinly laminated grey shaley MUDSTONE with rare mica. Dip 10 to 15 degrees. Interbedded dark and light with light laminations containing higher calcite content. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
						99.91	15.90	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES)			
						99.81	16.00	Extremely weak thinly laminated grey shaley MUDSTONE with rare mica recovered as soft gravelly CLAY. Residual soil. (PENNINE LOWER COAL MEASURES)			
								Complete at 16.00m			

Remarks

Scale (approx)	Logged By
1:20	PW

Figure No.
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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH306**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 12.21mbgl. Rotary core follow on from 13.00mbgl to 17.00mbgl.	150mm cased to 10.50m 127mm cased to 14.00m	129.77	Rochdale Borough Council	LKC 19 1015
	Location 384496.8 E 409340.6 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50	ES1 PID=0.0						MADE GROUND: Brown sandy gravelly CLAY with frequent rootlets, occasional brick fragments, coal, organic inclusions, inclusions of brown and grey mottled clay and rare sandstone boulders. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
0.50	D									
0.50-1.20	ES2 PID=0.0					(1.20)				
1.20-1.65	SPT N=10			6,1/1,1,3,5	128.57	1.20	MADE GROUND: Orange clayey gravelly SAND with occasional boulders of sandstone and rare brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
1.20	D									
1.20-1.65	BX									
1.20-2.00	ES3 PID=0.0									
						(1.40)				
2.00-2.45	SPT N=8			2,2/2,2,2,2						
2.00-2.45	BX									
2.60	D				127.17	2.60	MADE GROUND: Brown sandy gravelly CLAY with occasional brick fragments and coal. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
3.00-3.45	SPT N=14			1,1/2,3,5,4						
3.00-3.45	BX									
3.00-4.00	ES4									
4.00-4.45	SPT N=9			2,2/2,2,2,3						

Remarks
Terminated at 17.00mbgl by AECOM engineer.
Chiselling from 11.0-11.90mbgl.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH306

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH306**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 12.21mbgl. Rotary core follow on from 13.00mbgl to 17.00mbgl.	150mm cased to 10.50m 127mm cased to 14.00m	129.77	Rochdale Borough Council	LKC 19 1015
	Location 384496.8 E 409340.6 N	**Dates** 19/06/2019- 20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
4.00-4.45 4.00-5.00	BX ES5									
5.00-5.45 5.00-5.45 5.00-6.00	SPT N=8 BX ES6			2,2/2,2,2,2		(5.00)				
6.00-7.00	ES7									
6.50-6.95 6.50-6.95	SPT N=8 BX			2,2/2,2,2,2						
7.60	D				122.17	7.60	MADE GROUND: Brown sandy gravelly CLAY with rare brick fragments and coal. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.			
8.00-8.45	SPT N=9			1,2/2,2,2,3						

Remarks
Terminated at 17.00mbgl by AECOM engineer.
Chiselling from 11.0-11.90mbgl.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH306

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH306**
Boring Method Cable borehole undertaken to 12.21mbgl. Rotary core follow on from 13.00mbgl to 17.00mbgl.	**Casing Diameter** 150mm cased to 10.50m 127mm cased to 14.00m	**Ground Level (mOD)** 129.77	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 384496.8 E 409340.6 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 3/5

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45 8.00-8.50	BX ES8					(1.20)				
8.80	D				120.97	8.80	Soft consistency brown very sandy CLAY. Sand is fine to coarse. Increasingly sandy with depth. (TILL)			
9.50-9.95 9.50 9.50-9.95 9.50-10.00	SPT N=6 D B ES9			1,1/2,1,2,1		(1.20)				
10.00	D				119.77	10.00	Brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is fine to medium, subrounded of shale and sandstone. (TILL)			
						(0.50)				
					119.27	10.50	Firm to stiff consistency brown sandy silty CLAY. Sand is fine to coarse. (TILL)			
						(0.50)				
11.00-11.41 11.00-11.45 11.00-12.00	SPT 50/255 BX ES11			5,7/9,10,16,15	118.77	11.00	Very weak dark grey MUDSTONE. Highly weathered. (CARBONIFEROUS MUDSTONE, PENNINE LOWER COAL MEASURES)			
						(1.21)				
11.90-12.21 11.90-12.35	SPT 50/160 X			3,11/28,12,10						

Remarks
Terminated at 17.00mbgl by AECOM engineer.
Chiselling from 11.0-11.90mbgl.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH306

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH306**

Boring Method	**Casing Diameter**	**Ground Level (mOD)**	**Client**	**Job Number**
Cable borehole undertaken to 12.21mbgl. Rotary core follow on from 13.00mbgl to 17.00mbgl.	150mm cased to 10.50m 127mm cased to 14.00m	129.77	Rochdale Borough Council	LKC 19 1015
	Location 384496.8 E 409340.6 N	**Dates** 19/06/2019-20/06/2019	**Project Contractor** D&I Drilling	**Sheet** 4/5

Depth (m)	Sample / Tests	TCR	SCR	Casing Depth (m)	RQD	Water Depth (m)	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
									117.56	12.21	NO RECOVERY			
13.00		0	0		0		NR			(1.79)				
14.00-14.13								25/50 SPT 25*/70 50/60						
14.00		30	4		0		NI		115.77	14.00 (1.00)	Medium strong thinly laminated grey shaley MUDSTONE with rare mica recovered as GRAVEL. Highly weathered. (PENNINE LOWER COAL MEASURES) Cable hole cleaned via open hole drilling to 13.00mbgl. Rotary coring starts at 13.00mbgl.			
15.00-15.12								25/50 SPT 25*/85 50/30						
15.00		100	86		25		NI		114.77 114.55 114.32 114.29	15.00 (0.22) 15.22 (0.23) 15.45 15.48 (0.52)	Weak thinly laminated black MUDSTONE/SHALE with occasional mica. Frequent planar rough bedding parallel fractures drilling induced. Highly weathered. (PENNINE LOWER COAL MEASURES) Subvertical undulating smooth open fracture with no infill from 15.00-15.22mbgl. Medium strong thinly laminated dark grey MUDSTONE with occasional mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) 70 degrees smooth planar open fracture with no infill from 15.38-15.56mbgl. Weak thinly laminated black MUDSTONE/SHALE with occasional mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
16.00											Medium strong thinly laminated dark grey			

Remarks
Terminated at 17.00mbgl by AECOM engineer.
Chiselling from 11.0-11.90mbgl.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH306

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH306**
Machine : **Flush :** **Core Dia :** mm **Method :**	**Casing Diameter** 150mm cased to 10.50m 127mm cased to 14.00m **Location** 384496.8 E 409340.6 N	**Ground Level (mOD)** 129.77 **Dates** 19/06/2019-20/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 5/5

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
	50	35	0	NI		113.77	16.00 (1.00)	MUDSTONE with occasional mica. Dip 10-15 degrees. Moderately weathered. (PENNINE LOWER COAL MEASURES) 10 degrees smooth planar open fracture with no infill from 15.64-15.65mbgl. 60 degrees smooth planar open fracture with no infill from 15.65-15.74mbgl. 15 degrees smooth planar open fracture with no infill from 15.79-15.81mbgl. 70 degrees smooth planar open fracture with no infill from 15.89-16.00mbgl. 50 degrees smooth planar open fracture with no infill from 15.94-16.00mbgl. Medium strong thinly laminated dark grey MUDSTONE with occasional mica. Dip 10-15 degrees. Frequent planar rough bedding parallel fractures drilling induced. Moderately weathered. (PENNINE LOWER COAL MEASURES)			
17.00						112.77	17.00	Complete at 17.00m			

Remarks
Terminated at 17.00mbgl by AECOM engineer.
Chiselling from 11.0-11.90mbgl.

Scale (approx)	**Logged By**
1:20	PW

Figure No.
LKC 19 1015.BH306

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH401**

Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 15.00m	**Ground Level (mOD)** 130.34	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386287 E 408935 N	**Dates** 15/06/2019-16/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						130.04	(0.30) 0.30	TOPSOIL. Brown silty CLAY with occasional bands of sand.		
							(28.20)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)	**Logged By**
1:100	MW

Figure No.
LKC 19 1015.BH401

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Site South Heywood Link Road			**Borehole Number** BH401
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 15.00m	**Ground Level (mOD)** 130.34	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386287 E 408935 N	**Dates** 15/06/2019-16/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						101.84	28.50	Brown silty SAND. Sand is fine.		
							(3.00)			
						98.84	31.50	Brown silty CLAY with occasional sand bands.		
							(8.50)			
						90.34	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH401

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Site
South Heywood Link Road

Borehole Number
BH402

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter
127mm cased to 12.00m

Ground Level (mOD)
130.91

Client
Rochdale Borough Council

Job Number
LKC 19 1015

Location
386250 E 408983 N

Dates
17/06/2019

Project Contractor
D&I Drilling

Sheet
1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						130.61	(0.30) 0.30	TOPSOIL.		
								Brown SAND and GRAVEL.		
							(4.50)			
						126.11	4.80	Brown silty CLAY with occasional brown sand and gravel bands.		

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)
1:100

Logged By
MW

Figure No.
LKC 19 1015.BH402

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Site South Heywood Link Road			**Borehole Number** BH402
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 12.00m	**Ground Level (mOD)** 130.91	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 386250 E 408983 N	**Dates** 17/06/2019	**Project Contractor** D&I Drilling	**Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(31.20)			
						94.91	36.00	Brown SAND and GRAVEL.		
							(4.00)			
						90.91	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH402

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Site: South Heywood Link Road

Borehole Number: BH403

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter: 127mm cased to 14.00m

Ground Level (mOD): 129.39

Client: Rochdale Borough Council

Job Number: LKC 19 1015

Location: 386191 E 408958 N

Dates: 15/06/2019

Project Contractor: D&I Drilling

Sheet: 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						129.09	(0.30) 0.30	TOPSOIL.		
								Orange brown SAND.		
							(2.70)			
						126.39	3.00	Brown silty CLAY.		
							(9.50)			
						116.89	12.50	Brown SAND and GRAVEL.		
							(1.50)			
						115.39	14.00	Brown silty CLAY.		

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx): 1:100

Logged By: MW

Figure No.: LKC 19 1015.BH403

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH403**	
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 14.00m **Location** 386191 E 408958 N	**Ground Level (mOD)** 129.39 **Dates** 15/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(19.00)			
						96.39	33.00	Brown SAND and GRAVEL.		
							(7.00)	Loss of flush at 36.00mbgl. Steady drilling, noo broken or voided drilling.		
						89.39	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH403

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Site
South Heywood Link Road

Borehole Number
BH404

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter
127mm cased to 15.00m

Ground Level (mOD)
124.25

Client
Rochdale Borough Council

Job Number
LKC 19 1015

Location
386122 E 408975 N

Dates
13/06/2019

Project Contractor
D&I Drilling

Sheet
1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						123.95	(0.30) 0.30	TOPSOIL.		
								Orange brown CLAY.		
							(9.70)			
						114.25	10.00	Brown SAND and GRAVEL.		
							(2.00)			
						112.25	12.00	Brown silty CLAY.		
							(10.50)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)
1:100

Logged By
MW

Figure No.
LKC 19 1015.BH404

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Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 15.00m **Location** 386122 E 408975 N	**Ground Level (mOD)** 124.25 **Dates** 13/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						101.75	22.50	Brown SAND and GRAVEL.		
							(10.00)			
						91.75	32.50	Light grey MUDSTONE.		
							(7.50)			
						84.25	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH404

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Site: South Heywood Link Road

Borehole Number: BH405

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter: 127mm cased to 15.00m

Ground Level (mOD): 125.06

Client: Rochdale Borough Council

Job Number: LKC 19 1015

Location: 386110 E 408937 N

Dates: 14/06/2019

Project Contractor: D&I Drilling

Sheet: 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						124.76	(0.30) 0.30	TOPSOIL.		
								Orange brown CLAY.		
							(1.70)			
						123.06	2.00	Brown silty CLAY with occasional gravel bands.		
							(7.00)			
						116.06	9.00	Brown SAND.		
							(2.00)			
						114.06	11.00	Brown silty CLAY.		
							(12.50)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx): 1:100

Logged By: MW

Figure No.: LKC 19 1015.BH405

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Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 15.00m **Location** 386110 E 408937 N	**Ground Level (mOD)** 125.06 **Dates** 14/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						101.56	23.50	Light grey SILTSTONE.		
							(4.80)			
						96.76	28.30	COAL. Intact.		
							(1.70)			
						95.06	30.00	Dark grey SILTSTONE.		
							(10.00)			
						85.06	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH405

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Site
South Heywood Link Road

Borehole Number
BH406

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter
127mm cased to 15.00m

Ground Level (mOD)
122.18

Client
Rochdale Borough Council

Job Number
LKC 19 1015

Location
386070 E 408949 N

Dates
12/06/2019-16/06/2019

Project Contractor
D&I Drilling

Sheet
1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						121.78	(0.40) 0.40	TOPSOIL.		
								Brown CLAY with occasional gravel bands.		
							(21.60)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)
1:100

Logged By
MW

Figure No.
LKC 19 1015.BH406

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Site
South Heywood Link Road

Borehole Number
BH406

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter
127mm cased to 15.00m

Ground Level (mOD)
122.18

Client
Rochdale Borough Council

Job Number
LKC 19 1015

Location
386070 E 408949 N

Dates
12/06/2019-16/06/2019

Project Contractor
D&I Drilling

Sheet
2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						100.18	22.00	Light grey MUDSTONE.		
							(4.50)			
						95.68	26.50	Dark grey SILTSTONE.		
							(1.00)			
						94.68	27.50	COAL. Intact.		
							(2.00)			
						92.68	29.50	Light grey SILTSTONE.		
							(10.50)			
						82.18	40.00			

Remarks
Back fill. 30min.

Scale (approx)
1:100

Logged By
MW

Figure No.
LKC 19 1015.BH406

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Site	Borehole Number
South Heywood Link Road	BH407

Machine : Comacchio 205 Flush : Air/Mist Core Dia : mm Method : Rotary Open Hole	Casing Diameter 127mm cased to 9.00m	Ground Level (mOD) 120.77	Client Rochdale Borough Council	Job Number LKC 19 1015
	Location 386017 E 408918 N	Dates 11/06/2019-16/06/2019	Project Contractor D&I Drilling	Sheet 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(1.20)	MADE GROUND.		
						119.57	1.20	Brown silty CLAY.		
							(2.80)			
						116.77	4.00	Brown SAND and GRAVEL.		
							(14.00)			
						102.77	18.00	Light grey MUDSTONE.		

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH407

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Site	Borehole Number
South Heywood Link Road	BH407

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Comacchio 205	127mm cased to 9.00m	120.77	Rochdale Borough Council	LKC 19 1015
Flush : Air/Mist				
Core Dia : mm	**Location**	**Dates**	**Project Contractor**	**Sheet**
Method : Rotary Open Hole	386017 E 408918 N	11/06/2019-16/06/2019	D&I Drilling	2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(15.00)			
						87.77	33.00	Coal. Intact.		
							(2.00)			
						85.77	35.00	Light grey MUDSTONE.		
							(5.00)			
						80.77	40.00			

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH407

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com		**Site** South Heywood Link Road	**Borehole Number** **BH408**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 9.00m **Location** 385963 E 408881 N	**Ground Level (mOD)** 119.18 **Dates** 18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						118.88	(0.30) 0.30	TOPSOIL.		
							(1.20)	Brown silty CLAY.		
						117.68	1.50	Brown silty SAND and GRAVEL.		
							(5.50)			
						112.18	7.00	Brown silty CLAY.		
							(5.00)			
						107.18	12.00	Light grey SILTSTONE.		
							(15.00)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Standing time 1hour, 20min due to artisian water.
40min tracking rig to location.
Filling bowser. 1 hour.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH408

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH408**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 9.00m **Location** 385963 E 408881 N	**Ground Level (mOD)** 119.18 **Dates** 18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						92.18	27.00	Light grey SANDSTONE.		
							(5.00)			
						87.18	32.00	Artisian water encountered at 32.00mbgl. 1.50m length of casing placed above borehole, water rised above this. Drilling stopped and once flow reduced plugged with bentonite.		
								Complete at 32.00m		

Remarks
Back fill. 30min.
Standing time 1hour, 20min due to artisian water.
40min tracking rig to location.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH408

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Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 10.50m **Location** 385887 E 408838.1 N	**Ground Level (mOD)** 119.44 **Dates** 24/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(0.70)	TOPSOIL.		
						118.74	0.70	Brown silty CLAY with sand and gravel bands.		
							(9.80)			
						108.94	10.50	Light grey SILTSTONE with sandstone bands.		

Remarks

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH409

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Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 10.50m **Location** 385887 E 408838.1 N	**Ground Level (mOD)** 119.44 **Dates** 24/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(19.50)			
						89.44	30.00	Complete at 30.00m		

Remarks

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH409

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com		**Site** South Heywood Link Road	**Borehole Number** **BH410**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 5.00m **Location** 385816 E 408873 N	**Ground Level (mOD)** 121.76 **Dates** 19/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						121.46	(0.30) 0.30	TOPSOIL.		
								Brown silty CLAY with sand bands.		
							(9.70)			
						111.76	10.00	Light grey SILTSTONE.		
							(4.80)			
						106.96	14.80			
							(0.50)	COAL. Intact.		
						106.46	15.30	Light grey SANDSTONE.		

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH410

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH410**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 5.00m **Location** 385816 E 408873 N	**Ground Level (mOD)** 121.76 **Dates** 19/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(9.70)			
						96.76	25.00	Dark grey SILTSTONE.		
							(1.00)			
						95.76	26.00	Light grey SILTSTONE.		
							(4.00)			
						91.76	30.00	Complete at 30.00m		

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH410

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com		**Site** South Heywood Link Road	**Borehole Number** **BH411**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 6.00m **Location** 385737 E 408853 N	**Ground Level (mOD)** 123.03 **Dates** 18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						122.73	(0.30) 0.30	TOPSOIL. Brown silty CLAY with sand bands.		
							(10.20)			
						112.53	10.50	Light grey SILTSTONE.		
							(4.70)			
						107.83	15.20	COAL. Intact.		
							(0.80)			
						107.03	16.00	Light grey SANDSTONE.		
							(2.00)			
						105.03	18.00	Light grey SILTSTONE.		

Remarks
Filling bowser. 1hour.
Back fill. 30min.
1hour to move to location.
Filling bowser. 1hour.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH411

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH411**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 6.00m **Location** 385737 E 408853 N	**Ground Level (mOD)** 123.03 **Dates** 18/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(7.50)			
						97.53	25.50	Dark grey SILTSTONE.		
							(4.50)			
						93.03	30.00	Complete at 30.00m		

Remarks
Back fill. 30min.
1hour to move to location.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH411

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH412**

Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 5.00m	**Ground Level (mOD)** 125.37	**Client** Rochdale Borough Council	**Job Number** LKC 19 1015
	Location 385762 E 408925 N	**Dates** 19/06/2019	**Project Contractor** D&I Drilling	**Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						125.07	(0.30) 0.30	TOPSOIL.		
								Brown silty CLAY with sand bands.		
							(7.70)			
						117.37	8.00	Light grey SILTSTONE.		
							(4.00)			
						113.37	12.00	Light grey SANDSTONE.		
							(10.00)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)	**Logged By**
1:100	MW

Figure No.
LKC 19 1015.BH412

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LK GROUP	**LK CONSULT LTD** Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com	**Site** South Heywood Link Road	**Borehole Number** **BH412**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 5.00m **Location** 385762 E 408925 N	**Ground Level (mOD)** 125.37 **Dates** 19/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						103.37	22.00	Dark Grey SILTSTONE.		
							(2.00)			
						101.37	24.00	Light grey SILTSTONE.		
							(6.00)			
						95.37	30.00	Complete at 30.00m		

Remarks
Back fill. 30min.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH412

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LK CONSULT LTD Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS Tel: 0161 763 7200 web: www.thelkgroup.com		**Site** South Heywood Link Road	**Borehole Number** **BH413**
Machine : Comacchio 205 **Flush :** Air/Mist **Core Dia :** mm **Method :** Rotary Open Hole	**Casing Diameter** 127mm cased to 5.00m **Location** 385781.1 E 408982 N	**Ground Level (mOD)** 127.24 **Dates** 20/06/2019	**Client** Rochdale Borough Council **Project Contractor** D&I Drilling	**Job Number** LKC 19 1015 **Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						126.94	(0.30) 0.30	TOPSOIL. Brown silty CLAY with occasional sand bands.		
							(4.70)			
						122.24	5.00	Light grey SILTSTONE.		
							(7.00)			
						115.24	12.00	Light grey SANDSTONE.		
							(13.00)			

Remarks
Filling bowser. 1 hour.
Back fill. 30min.
Filling bowser. 1 hour.

Scale (approx)	Logged By
1:100	MW

Figure No.
LKC 19 1015.BH413

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LK GROUP

LK CONSULT LTD
Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Site
South Heywood Link Road

Borehole Number
BH413

Machine : Comacchio 205
Flush : Air/Mist
Core Dia : mm
Method : Rotary Open Hole

Casing Diameter
127mm cased to 5.00m

Ground Level (mOD)
127.24

Client
Rochdale Borough Council

Job Number
LKC 19 1015

Location
385781.1 E 408982 N

Dates
20/06/2019

Project Contractor
D&I Drilling

Sheet
2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						102.24	25.00	Complete at 25.00m		

Remarks
Back fill. 30min.

Scale (approx)
1:100

Logged By
MW

Figure No.
LKC 19 1015.BH413

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Appendix B

Certificate of Analysis - Soil

Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	19-20466-1
Initial Date of Issue:	26-Jun-2019
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Colin Crompton Contaminated Land
Project	LKC 19 1015 Junction 19, Heywood

Quotation No.:		**Date Received:**	18-Jun-2019
Order No.:	736981	**Date Instructed:**	20-Jun-2019
No. of Samples:	1		
Turnaround (Wkdays):	5	**Results Due:**	26-Jun-2019
Date Approved:	26-Jun-2019		

Approved By:



Details: Robert Monk, Technical Manager

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult			**Chemtest Job No.:**		19-20466
Quotation No.:			**Chemtest Sample ID.:**		844534
			Client Sample ID.:		BH301/D1
			Sample Type:		SOIL
			Top Depth (m):		0.00
			Bottom Depth (m):		0.60
			Date Sampled:		14-Jun-2019
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-
Moisture	N	2030	%	0.020	29
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones
Soil Texture	N	2040		N/A	Sand
pH	M	2010		N/A	7.4
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.72
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010
Total Sulphur	M	2175	%	0.010	0.093
Chloride (Water Soluble)	M	2220	g/l	0.010	0.012
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	1.9
Arsenic	M	2450	mg/kg	1.0	13
Barium	M	2450	mg/kg	10	85
Beryllium	U	2450	mg/kg	1.0	< 1.0
Cadmium	M	2450	mg/kg	0.10	0.33
Chromium	M	2450	mg/kg	1.0	14
Copper	M	2450	mg/kg	0.50	24
Mercury	M	2450	mg/kg	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	13
Lead	M	2450	mg/kg	0.50	64
Selenium	M	2450	mg/kg	0.20	0.57
Vanadium	U	2450	mg/kg	5.0	25
Zinc	M	2450	mg/kg	0.50	63
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.068
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	31
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult			**Chemtest Job No.:**		19-20466
Quotation No.:			**Chemtest Sample ID.:**		844534
			Client Sample ID.:		BH301/D1
			Sample Type:		SOIL
			Top Depth (m):		0.00
			Bottom Depth (m):		0.60
			Date Sampled:		14-Jun-2019
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	31
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	2.7
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	52
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	55
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	86
Naphthalene	M	2800	mg/kg	0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	3.4
Anthracene	M	2800	mg/kg	0.10	0.66
Fluoranthene	M	2800	mg/kg	0.10	3.6
Pyrene	M	2800	mg/kg	0.10	3.0
Benzo[a]anthracene	M	2800	mg/kg	0.10	1.2
Chrysene	M	2800	mg/kg	0.10	1.6
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.6
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.57
Benzo[a]pyrene	M	2800	mg/kg	0.10	1.2
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.69
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.73
Coronene	N	2800	mg/kg	0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	18
Total Phenols	M	2920	mg/kg	0.30	< 0.30

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Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	19-21411-1
Initial Date of Issue:	16-Jul-2019
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Colin Crompton Contaminated Land
Project	LKC 19 1015 Junction 19, Heywood

Quotation No.:		**Date Received:**	25-Jun-2019
Order No.:	736981	**Date Instructed:**	09-Jul-2019
No. of Samples:	24		
Turnaround (Wkdays):	5	**Results Due:**	15-Jul-2019
Date Approved:	16-Jul-2019		

Approved By:



Details: Martin Dyer, Laboratory Manager

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Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
pH	U	1010	10:1		N/A		8.6	8.7
Electrical Conductivity	U	1020	10:1	µS/cm	1.0		1100	420
Chloride	U	1220	10:1	mg/l	1.0		2.6	4.1
Ammoniacal Nitrogen	U	1220	10:1	mg/l	0.050		1.6	0.13
Nitrate	U	1220	10:1	mg/l	0.50		6.2	2.2
Sulphur	N	1220	10:1	mg/l	1.0		160	37
Sulphate	U	1220	10:1	mg/l	1.0		470	110
Cyanide (Total)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Cyanide (Free)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Sulphide	U	1325	10:1	mg/l	0.050		< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	10:1	µg/l	1.0		4.8	2.5
Boron (Dissolved)	U	1450	10:1	µg/l	20		110	40
Barium (Dissolved)	U	1450	10:1	µg/l	5.0		54	27
Beryllium (Dissolved)	U	1450	10:1	µg/l	1.0		< 1.0	< 1.0
Cadmium (Dissolved)	U	1450	10:1	µg/l	0.080		0.087	< 0.080
Chromium (Dissolved)	U	1450	10:1	µg/l	1.0		27	23
Copper (Dissolved)	U	1450	10:1	µg/l	1.0		1.2	2.3
Mercury (Dissolved)	U	1450	10:1	µg/l	0.50		< 0.50	< 0.50
Nickel (Dissolved)	U	1450	10:1	µg/l	1.0		2.3	< 1.0
Lead (Dissolved)	U	1450	10:1	µg/l	1.0		2.1	< 1.0
Selenium (Dissolved)	U	1450	10:1	µg/l	1.0		1.8	1.3
Vanadium (Dissolved)	U	1450	10:1	µg/l	1.0		9.6	8.6
Zinc (Dissolved)	U	1450	10:1	µg/l	1.0		22	2.9
Chromium (Hexavalent)	U	1490	10:1	µg/l	20		[B] < 20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] 25	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 25	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] 17	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
Aromatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C35-C44	N	1680	10:1	µg/l	50.00		[B] < 50	[B] < 50
Total Aromatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 17	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	10:1	µg/l	10		[B] 42	[B] < 10
Dichlorodifluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Chloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Vinyl Chloride	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromomethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromochloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Trichloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Benzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichloroethene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Dibromomethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Bromodichloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Toluene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,1,2-Trichloroethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Tetrachloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Dibromochloromethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,2-Dibromoethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chlorobenzene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Ethylbenzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
m & p-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
o-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Styrene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Tribromomethane	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	1760	10:1	µg/l	50	[B] < 50	[B] < 50
N-Propylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	U	1760	10:1	µg/l	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	U	1760	10:1	µg/l	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Phenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Naphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Benzo[a]pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluorene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Chrysene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Coronene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Total Of 17 PAH's	N	1800	10:1	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030	< 0.030

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-			Fibres/Clumps	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected			Chrysotile	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-		-			Stereo Microscopy	-		-
Moisture	N	2030	%	0.020	17	6.7	32	23	18	19	17	16	11
Soil Colour	N	2040		N/A	Black		Brown			Brown	Brown		Brown
Other Material	N	2040		N/A	Stones		Stones			Stones	Stones		Stones
Soil Texture	N	2040		N/A	Clay		Sand			Clay	Clay		Sand
pH	M	2010		N/A	8.0		7.9			8.0	8.4		8.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.45		0.43			0.92	0.56		< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	1.0		0.30			0.90	0.54		0.16
Total Sulphur	M	2175	%	0.010	0.015		0.31			0.12	0.074		0.14
Chloride (Water Soluble)	M	2220	g/l	0.010	0.012		< 0.010			0.034	0.024		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	4.0		3.5			13	17		29
Arsenic	M	2450	mg/kg	1.0	18		14			16	14		3.4
Barium	M	2450	mg/kg	10	180		130			140	180		72
Beryllium	U	2450	mg/kg	1.0	1.4		1.0			< 1.0	< 1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10	1.2		0.58			0.20	0.27		< 0.10
Chromium	M	2450	mg/kg	1.0	29		25			32	27		17
Copper	M	2450	mg/kg	0.50	68		68			59	42		7.7
Mercury	M	2450	mg/kg	0.10	0.30		0.29			0.30	0.15		< 0.10
Nickel	M	2450	mg/kg	0.50	24		28			34	29		11
Lead	M	2450	mg/kg	0.50	160		100			110	77		19
Selenium	M	2450	mg/kg	0.20	0.35		0.33			< 0.20	0.26		< 0.20
Vanadium	U	2450	mg/kg	5.0	33		34			55	31		21
Zinc	M	2450	mg/kg	0.50	140		110			200	81		22
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.030		0.038			0.024	0.016		0.0048
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 7.4		[B] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 13		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 42		[B] 24			[B] 33	[B] 27		[B] 13

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 43		[B] 24			[B] 33	[B] 47		[B] 13
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] 5.2		[B] < 1.0			[B] < 1.0	[B] 10		[B] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 190		[B] 31			[B] 1.2	[B] 78		[B] 25
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 190		[B] 31			[B] < 5.0	[B] 88		[B] 25
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 230		[B] 55			[B] 34	[B] 140		[B] 38
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromomethane	M	2760	µg/kg	20		[B] < 20			[B] < 20			[B] < 20	
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Benzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
Toluene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10				[B] < 10			[B] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0				[B] < 5.0			[B] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Styrene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50				[B] < 50			[B] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50				[B] < 50			[B] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Phenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 1.9			[B] < 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 0.68			[B] < 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 0.63			[B] < 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Phenanthrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 3.0			[B] 1.1	
Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.75			[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.8			[B] 3.3	
Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.2			[B] 2.7	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.5	
Chrysene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.3			[B] 1.7	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.7	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.66	
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.97			[B] 1.4	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.62	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.72	
Naphthalene	N	2800	mg/kg	0.010	0.44		< 0.010	0.49		0.93	0.17		< 0.010	
Acenaphthylene	N	2800	mg/kg	0.010	0.43		0.030	0.050		0.080	0.060		< 0.010	
Acenaphthene	N	2800	mg/kg	0.010	0.62		< 0.010	0.29		0.92	0.40		< 0.010	
Fluorene	N	2800	mg/kg	0.010	0.59		< 0.010	0.28		0.58	0.36		< 0.010	
Phenanthrene	N	2800	mg/kg	0.010	6.9		1.8	1.8		4.0	6.0		0.47	
Anthracene	N	2800	mg/kg	0.010	1.3		0.24	0.43		0.92	1.5		0.050	
Fluoranthene	N	2800	mg/kg	0.010	7.9		1.9	2.6		5.2	7.8		1.1	
Pyrene	N	2800	mg/kg	0.010	7.5		1.6	2.2		4.8	6.9		0.98	
Benzo[a]anthracene	N	2800	mg/kg	0.010	3.4		0.51	0.87		1.9	2.9		0.22	
Chrysene	N	2800	mg/kg	0.010	4.2		0.84	1.2		2.7	3.2		0.31	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	4.0		0.73	1.1		3.1	3.0		< 0.010	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	1.4		0.21	0.41		0.78	1.1		< 0.010	
Benzo[a]pyrene	N	2800	mg/kg	0.010	3.1		0.33	0.74		2.0	2.4		< 0.010	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	2.3		0.35	0.57		1.5	1.6		< 0.010	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.34		0.010	0.050		0.20	0.17		< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	2.4		0.47	0.61		1.7	1.6		< 0.010	
Coronene	N	2800	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	47		9.0	14		31	39		3.1	
Total Phenols	M	2920	mg/kg	0.30	< 0.30		< 0.30			< 0.30	< 0.30		< 0.30	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848714	848715	848717	848718	848720	848721	848722	848724	848726
		Client Sample ID.:			BH306/D4	BH306/D5	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D5	BH304/D7
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	6.00	8.00	0.00	0.50	1.20	3.00	5.00
		Bottom Depth (m):			4.00	5.00	7.00	8.50	0.50	1.20	2.00	4.00	6.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL			LIVERPOOL	LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		Fibres/Clumps	-	-			-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		Amosite	No Asbestos Detected	No Asbestos Detected			No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-		Stereo Microscopy	-	-			-	-
Moisture	N	2030	%	0.020	18	17	17	12	13	18	19	14	16
Soil Colour	N	2040		N/A	Black		Brown	Brown	Black			Brown	Brown
Other Material	N	2040		N/A	Stones		Stones	Stones	Stones			Stones	Stones, Brick
Soil Texture	N	2040		N/A	Sand		Clay	Loam	Clay			Clay	Clay
pH	M	2010		N/A	8.1		8.1	5.4	7.7			8.2	7.9
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.3		< 0.40	< 0.40	0.57			0.96	1.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.12		0.20	< 0.010	0.94			0.35	0.43
Total Sulphur	M	2175	%	0.010	0.042		0.10	0.016	0.20			0.11	0.10
Chloride (Water Soluble)	M	2220	g/l	0.010	< 0.010		0.016	< 0.010	< 0.010			0.022	0.024
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50			[B] < 0.50	[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50			[B] 1.4	[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	10		27	1.7	7.0			11	5.0
Arsenic	M	2450	mg/kg	1.0	22		14	6.9	14			15	12
Barium	M	2450	mg/kg	10	170		140	52	150			230	130
Beryllium	U	2450	mg/kg	1.0	< 1.0		1.2	< 1.0	< 1.0			1.1	< 1.0
Cadmium	M	2450	mg/kg	0.10	0.70		0.64	< 0.10	0.34			0.35	0.24
Chromium	M	2450	mg/kg	1.0	150		22	19	30			25	23
Copper	M	2450	mg/kg	0.50	95		74	19	41			54	47
Mercury	M	2450	mg/kg	0.10	0.31		0.15	< 0.10	0.15			0.42	0.17
Nickel	M	2450	mg/kg	0.50	25		31	18	23			26	27
Lead	M	2450	mg/kg	0.50	140		54	12	74			120	63
Selenium	M	2450	mg/kg	0.20	0.31		0.41	0.24	0.34			0.36	0.29
Vanadium	U	2450	mg/kg	5.0	38		28	22	28			34	29
Zinc	M	2450	mg/kg	0.50	140		68	40	96			100	70
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50	< 0.50			< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.060		0.017	0.0041	0.020			0.021	0.024
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 17		[B] 30	[B] < 1.0	[B] < 1.0			[B] 21	[B] 12

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848714	848715	848717	848718	848720	848721	848722	848724	848726
					Client Sample ID.:	BH306/D4	BH306/D5	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D5	BH304/D7
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	4.00	6.00	8.00	0.00	0.50	1.20	3.00	5.00
					Bottom Depth (m):	4.00	5.00	7.00	8.50	0.50	1.20	2.00	4.00	6.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL			LIVERPOOL	LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 17		[B] 30	[B] < 5.0	[B] < 5.0			[B] 21	[B] 12	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0		[B] 4.4	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 25		[B] 67	[B] < 1.0	[B] < 1.0			[B] 50	[B] 22	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 25		[B] 71	[B] < 5.0	[B] < 5.0			[B] 51	[B] 22	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 42		[B] 100	[B] < 10	[B] < 10			[B] 72	[B] 34	
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Bromomethane	M	2760	µg/kg	20		[B] < 20				[B] < 20				
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0				
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0				[B] < 5.0				
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Benzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0				
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0				[B] < 5.0				
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10				[B] < 10				
Toluene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10				[B] < 10				
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10				[B] < 10				
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0				

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848714	848715	848717	848718	848720	848721	848722	848724	848726
		Client Sample ID.:	BH306/D4	BH306/D5	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D5	BH304/D7
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	4.00	6.00	8.00	0.00	0.50	1.20	3.00	5.00
		Bottom Depth (m):	4.00	5.00	7.00	8.50	0.50	1.20	2.00	4.00	6.00
		Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL			LIVERPOOL	LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10				[B] < 10			
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0				[B] < 5.0			
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Styrene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50				[B] < 50			
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50				[B] < 50			
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
Phenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848714	848715	848717	848718	848720	848721	848722	848724	848726
					Client Sample ID.:	BH306/D4	BH306/D5	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D5	BH304/D7
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	4.00	6.00	8.00	0.00	0.50	1.20	3.00	5.00
					Bottom Depth (m):	4.00	5.00	7.00	8.50	0.50	1.20	2.00	4.00	6.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL			LIVERPOOL	LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848714	848715	848717	848718	848720	848721	848722	848724	848726
					Client Sample ID.:	BH306/D4	BH306/D5	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D5	BH304/D7
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	4.00	6.00	8.00	0.00	0.50	1.20	3.00	5.00
					Bottom Depth (m):	4.00	5.00	7.00	8.50	0.50	1.20	2.00	4.00	6.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL			LIVERPOOL	LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Phenanthrene	M	2790	mg/kg	0.50		[B] 2.8					[B] 1.1			
Anthracene	M	2790	mg/kg	0.50		[B] 0.67					[B] < 0.50			
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Fluoranthene	M	2790	mg/kg	0.50		[B] 4.0					[B] 1.5			
Pyrene	M	2790	mg/kg	0.50		[B] 3.2					[B] 1.2			
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.82			
Chrysene	M	2790	mg/kg	0.50		[B] 1.7					[B] 0.96			
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.91			
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] 0.85					[B] < 0.50			
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] 1.6					[B] 0.67			
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] 0.68					[B] < 0.50			
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50			
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] 0.81					[B] < 0.50			
Naphthalene	N	2800	mg/kg	0.010	0.37		< 0.010	< 0.010	0.76		1.3	1.3	< 0.010	
Acenaphthylene	N	2800	mg/kg	0.010	0.10		< 0.010	< 0.010	0.14		0.13	0.20	< 0.010	
Acenaphthene	N	2800	mg/kg	0.010	0.43		< 0.010	< 0.010	0.45		0.41	0.60	< 0.010	
Fluorene	N	2800	mg/kg	0.010	0.31		< 0.010	< 0.010	0.27		0.39	0.60	< 0.010	
Phenanthrene	N	2800	mg/kg	0.010	3.3		0.89	< 0.010	3.6		3.2	4.7	1.1	
Anthracene	N	2800	mg/kg	0.010	0.70		0.13	< 0.010	0.48		0.65	1.1	0.13	
Fluoranthene	N	2800	mg/kg	0.010	4.5		0.99	< 0.010	4.8		2.7	4.8	1.3	
Pyrene	N	2800	mg/kg	0.010	4.3		1.0	< 0.010	4.8		2.4	5.3	1.1	
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.9		0.15	< 0.010	0.93		0.89	1.7	0.25	
Chrysene	N	2800	mg/kg	0.010	2.4		0.22	< 0.010	1.5		1.3	2.3	0.40	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.4		< 0.010	< 0.010	1.2		1.2	2.0	< 0.010	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.83		< 0.010	< 0.010	0.20		0.38	0.55	< 0.010	
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.8		< 0.010	< 0.010	0.51		0.73	1.4	< 0.010	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	1.5		< 0.010	< 0.010	0.23		0.53	0.86	< 0.010	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.17		< 0.010	< 0.010	0.020		< 0.010	0.060	< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	1.6		< 0.010	< 0.010	0.53		0.63	1.1	< 0.010	
Coronene	N	2800	mg/kg	0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	27		3.4	< 0.20	20		17	29	4.3	
Total Phenols	M	2920	mg/kg	0.30	< 0.30		< 0.30	< 0.30	< 0.30			< 0.30	< 0.30	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:				LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type	U	2192		N/A		-	-	-		-
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A		-	-	-		-
Moisture	N	2030	%	0.020	23	22	13	17	15	11
Soil Colour	N	2040		N/A		Black	Brown	Brown		Grey
Other Material	N	2040		N/A		Stones	Stones	Stones		Stones
Soil Texture	N	2040		N/A		Sand	Clay	Clay		Sand
pH	M	2010		N/A		7.5	7.7	8.0		7.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40		0.65	< 0.40	1.7		1.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.040	< 0.010	0.022		< 0.010
Total Sulphur	M	2175	%	0.010		0.073	0.030	0.095		0.031
Chloride (Water Soluble)	M	2220	g/l	0.010		< 0.010	< 0.010	< 0.010		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		2.4	1.9	2.7		0.75
Arsenic	M	2450	mg/kg	1.0		19	16	18		2.5
Barium	M	2450	mg/kg	10		180	320	200		110
Beryllium	U	2450	mg/kg	1.0		< 1.0	< 1.0	1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10		0.38	0.12	0.38		0.10
Chromium	M	2450	mg/kg	1.0		40	17	39		20
Copper	M	2450	mg/kg	0.50		42	17	73		21
Mercury	M	2450	mg/kg	0.10		0.24	< 0.10	0.34		< 0.10
Nickel	M	2450	mg/kg	0.50		18	26	54		20
Lead	M	2450	mg/kg	0.50		90	16	130		16
Selenium	M	2450	mg/kg	0.20		0.52	0.30	0.40		0.26
Vanadium	U	2450	mg/kg	5.0		38	18	60		23
Zinc	M	2450	mg/kg	0.50		74	35	120		41
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50	< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010		0.043	0.011	0.046		0.011
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0		[B] 28	[B] < 1.0	[B] 12		[B] < 1.0

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					Chemtest Job No.:	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					Chemtest Sample ID.:	848729	848730	848731	848735	848736	848737
					Client Sample ID.:	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.50	0.80	0.00	0.30	0.50
					Bottom Depth (m):	0.50	0.80	1.20	0.30	0.50	1.20
					Date Sampled:	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
					Asbestos Lab:		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		[B] 28	[B] < 5.0	[B] 12		[B] < 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		[B] 2.0	[B] < 1.0	[B] 8.2		[B] < 1.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0		[B] 41	[B] < 1.0	[B] 53		[B] < 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		[B] 43	[B] < 5.0	[B] 62		[B] < 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		[B] 71	[B] < 10	[B] 74		[B] < 10	
Dichlorodifluoromethane	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Chloromethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Vinyl Chloride	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Bromomethane	M	2760	µg/kg	20	[B] < 20				[B] < 20		
Chloroethane	U	2760	µg/kg	2.0	[B] < 2.0				[B] < 2.0		
Trichlorofluoromethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,1-Dichloroethene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,1-Dichloroethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Bromochloromethane	U	2760	µg/kg	5.0	[B] < 5.0				[B] < 5.0		
Trichloromethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Tetrachloromethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,1-Dichloropropene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Benzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,2-Dichloroethane	M	2760	µg/kg	2.0	[B] < 2.0				[B] < 2.0		
Trichloroethene	N	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
1,2-Dichloropropane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Dibromomethane	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Bromodichloromethane	M	2760	µg/kg	5.0	[B] < 5.0				[B] < 5.0		
cis-1,3-Dichloropropene	N	2760	µg/kg	10	[B] < 10				[B] < 10		
Toluene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	[B] < 10				[B] < 10		
1,1,2-Trichloroethane	M	2760	µg/kg	10	[B] < 10				[B] < 10		
Tetrachloroethene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0		

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848729	848730	848731	848735	848736	848737
					Client Sample ID.:	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.50	0.80	0.00	0.30	0.50
					Bottom Depth (m):	0.50	0.80	1.20	0.30	0.50	1.20
					Date Sampled:	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
					Asbestos Lab:		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,3-Dichloropropane	U	2760	µg/kg	2.0	[B] < 2.0				[B] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10	[B] < 10				[B] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0	[B] < 5.0				[B] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	[B] < 2.0				[B] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
o-Xylene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Styrene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	[B] < 50				[B] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	[B] < 50				[B] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	[B] < 2.0				[B] < 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[B] < 1.0				[B] < 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Phenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL

Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Methylphenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Nitrobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Isophorone	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Naphthalene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Acenaphthylene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Acenaphthene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Dibenzofuran	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Fluorene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Azobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848729	848730	848731	848735	848736	848737
					Client Sample ID.:	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.50	0.80	0.00	0.30	0.50
					Bottom Depth (m):	0.50	0.80	1.20	0.30	0.50	1.20
					Date Sampled:	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
					Asbestos Lab:		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Phenanthrene	M	2790	mg/kg	0.50	[B] 1.1				[B] 0.73	
Anthracene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50	[B] 2.1				[B] 1.5	
Pyrene	M	2790	mg/kg	0.50	[B] 1.8				[B] 1.2	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50	[B] 1.2				[B] 0.71	
Chrysene	M	2790	mg/kg	0.50	[B] 1.4				[B] 0.91	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	[B] 1.6				[B] 0.93	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50	[B] 1.1				[B] 0.72	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	[B] < 0.50				[B] < 0.50	
Naphthalene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.60		< 0.010
Acenaphthylene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.090		< 0.010
Acenaphthene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.52		< 0.010
Fluorene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.32		< 0.010
Phenanthrene	N	2800	mg/kg	0.010		1.1	< 0.010	4.0		< 0.010
Anthracene	N	2800	mg/kg	0.010		0.14	< 0.010	0.75		< 0.010
Fluoranthene	N	2800	mg/kg	0.010		2.2	< 0.010	6.6		< 0.010
Pyrene	N	2800	mg/kg	0.010		1.9	< 0.010	6.4		< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010		0.47	< 0.010	2.4		< 0.010
Chrysene	N	2800	mg/kg	0.010		0.71	< 0.010	2.9		< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		0.69	< 0.010	3.6		< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		0.21	< 0.010	1.1		< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010		0.33	< 0.010	2.2		< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		0.25	< 0.010	1.7		< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010		0.010	< 0.010	0.24		< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		0.40	< 0.010	1.9		< 0.010
Coronene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010		< 0.010
Total Of 17 PAH's	N	2800	mg/kg	0.20		8.4	< 0.20	35		< 0.20
Total Phenols	M	2920	mg/kg	0.30		< 0.30	< 0.30	< 0.30		< 0.30

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848704		BH302/D1		19-Jun-2019	B	Amber Glass 250ml
848704		BH302/D1		19-Jun-2019	B	Amber Glass 60ml
848704		BH302/D1		19-Jun-2019	B	Plastic Tub 500g
848705		BH302/D2		19-Jun-2019	B	Amber Glass 250ml
848705		BH302/D2		19-Jun-2019	B	Amber Glass 60ml
848705		BH302/D2		19-Jun-2019	B	Plastic Tub 500g
848706		BH302/D3		19-Jun-2019	B	Amber Glass 250ml
848706		BH302/D3		19-Jun-2019	B	Amber Glass 60ml
848706		BH302/D3		19-Jun-2019	B	Plastic Tub 500g
848707		BH302/D4		19-Jun-2019	B	Amber Glass 250ml
848707		BH302/D4		19-Jun-2019	B	Amber Glass 60ml
848707		BH302/D4		19-Jun-2019	B	Plastic Tub 500g
848708		BH302/D5		19-Jun-2019	B	Amber Glass 250ml
848708		BH302/D5		19-Jun-2019	B	Amber Glass 60ml
848708		BH302/D5		19-Jun-2019	B	Plastic Tub 500g
848709		BH302/D6		19-Jun-2019	B	Amber Glass 250ml
848709		BH302/D6		19-Jun-2019	B	Amber Glass 60ml
848709		BH302/D6		19-Jun-2019	B	Plastic Tub 500g
848711		BH306/D1		19-Jun-2019	B	Amber Glass 250ml
848711		BH306/D1		19-Jun-2019	B	Amber Glass 60ml
848711		BH306/D1		19-Jun-2019	B	Plastic Tub 500g
848712		BH306/D2		19-Jun-2019	B	Amber Glass 250ml
848712		BH306/D2		19-Jun-2019	B	Amber Glass 60ml
848712		BH306/D2		19-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848713		BH306/D3		19-Jun-2019	B	Amber Glass 250ml
848713		BH306/D3		19-Jun-2019	B	Amber Glass 60ml
848713		BH306/D3		19-Jun-2019	B	Plastic Tub 500g
848714		BH306/D4		19-Jun-2019	B	Amber Glass 250ml
848714		BH306/D4		19-Jun-2019	B	Amber Glass 60ml
848714		BH306/D4		19-Jun-2019	B	Plastic Tub 500g
848715		BH306/D5		19-Jun-2019	B	Amber Glass 250ml
848715		BH306/D5		19-Jun-2019	B	Amber Glass 60ml
848715		BH306/D5		19-Jun-2019	B	Plastic Tub 500g
848717		BH306/D7		19-Jun-2019	B	Amber Glass 250ml
848717		BH306/D7		19-Jun-2019	B	Amber Glass 60ml
848717		BH306/D7		19-Jun-2019	B	Plastic Tub 500g
848718		BH306/D8		19-Jun-2019	B	Amber Glass 250ml
848718		BH306/D8		19-Jun-2019	B	Amber Glass 60ml
848718		BH306/D8		19-Jun-2019	B	Plastic Tub 500g
848720		BH304/D1		20-Jun-2019	B	Amber Glass 250ml
848720		BH304/D1		20-Jun-2019	B	Amber Glass 60ml
848720		BH304/D1		20-Jun-2019	B	Plastic Tub 500g
848721		BH304/D2		20-Jun-2019	B	Amber Glass 250ml
848721		BH304/D2		20-Jun-2019	B	Amber Glass 60ml
848721		BH304/D2		20-Jun-2019	B	Plastic Tub 500g
848722		BH304/D3		20-Jun-2019	B	Amber Glass 250ml
848722		BH304/D3		20-Jun-2019	B	Amber Glass 60ml
848722		BH304/D3		20-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848724		BH304/D5		20-Jun-2019	B	Amber Glass 250ml
848724		BH304/D5		20-Jun-2019	B	Amber Glass 60ml
848724		BH304/D5		20-Jun-2019	B	Plastic Tub 500g
848726		BH304/D7		20-Jun-2019	B	Amber Glass 250ml
848726		BH304/D7		20-Jun-2019	B	Amber Glass 60ml
848726		BH304/D7		20-Jun-2019	B	Plastic Tub 500g
848729		BH303/D1		21-Jun-2019	B	Amber Glass 250ml
848729		BH303/D1		21-Jun-2019	B	Amber Glass 60ml
848729		BH303/D1		21-Jun-2019	B	Plastic Tub 500g
848730		BH303/D2		21-Jun-2019	B	Amber Glass 250ml
848730		BH303/D2		21-Jun-2019	B	Amber Glass 60ml
848730		BH303/D2		21-Jun-2019	B	Plastic Tub 500g
848731		BH303/D3		21-Jun-2019	B	Amber Glass 250ml
848731		BH303/D3		21-Jun-2019	B	Amber Glass 60ml
848731		BH303/D3		21-Jun-2019	B	Plastic Tub 500g
848735		BH305/D1		21-Jun-2019	B	Amber Glass 250ml
848735		BH305/D1		21-Jun-2019	B	Amber Glass 60ml
848735		BH305/D1		21-Jun-2019	B	Plastic Tub 500g
848736		BH305/D2		21-Jun-2019	B	Amber Glass 250ml
848736		BH305/D2		21-Jun-2019	B	Amber Glass 60ml
848736		BH305/D2		21-Jun-2019	B	Plastic Tub 500g
848737		BH305/D3		21-Jun-2019	B	Amber Glass 250ml
848737		BH305/D3		21-Jun-2019	B	Amber Glass 60ml
848737		BH305/D3		21-Jun-2019	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1680	Fatty Acids	Fatty Acids	GCMS detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.

Test Methods

SOP	Title	Parameters included	Method summary
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Chemtest
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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	19-21411-2		
Initial Date of Issue:	16-Jul-2019	**Date of Re-Issue:**	14-Aug-2019
Client	LK Consult		
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS		
Contact(s):	Colin Crompton Contaminated Land		
Project	LKC 19 1015 Junction 19, Heywood		
Quotation No.:		**Date Received:**	25-Jun-2019
Order No.:	736981	**Date Instructed:**	09-Jul-2019
No. of Samples:	26		
Turnaround (Wkdays):	16	**Results Due:**	30-Jul-2019
Date Approved:	14-Aug-2019		

Approved By:



Details: Martin Dyer, Laboratory Manager

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Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
pH	U	1010	10:1		N/A		8.6	8.7
Electrical Conductivity	U	1020	10:1	µS/cm	1.0		1100	420
Chloride	U	1220	10:1	mg/l	1.0		2.6	4.1
Ammoniacal Nitrogen	U	1220	10:1	mg/l	0.050		1.6	0.13
Nitrate	U	1220	10:1	mg/l	0.50		6.2	2.2
Sulphur	N	1220	10:1	mg/l	1.0		160	37
Sulphate	U	1220	10:1	mg/l	1.0		470	110
Cyanide (Total)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Cyanide (Free)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Sulphide	U	1325	10:1	mg/l	0.050		< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	10:1	µg/l	1.0		4.8	2.5
Boron (Dissolved)	U	1450	10:1	µg/l	20		110	40
Barium (Dissolved)	U	1450	10:1	µg/l	5.0		54	27
Beryllium (Dissolved)	U	1450	10:1	µg/l	1.0		< 1.0	< 1.0
Cadmium (Dissolved)	U	1450	10:1	µg/l	0.080		0.087	< 0.080
Chromium (Dissolved)	U	1450	10:1	µg/l	1.0		27	23
Copper (Dissolved)	U	1450	10:1	µg/l	1.0		1.2	2.3
Mercury (Dissolved)	U	1450	10:1	µg/l	0.50		< 0.50	< 0.50
Nickel (Dissolved)	U	1450	10:1	µg/l	1.0		2.3	< 1.0
Lead (Dissolved)	U	1450	10:1	µg/l	1.0		2.1	< 1.0
Selenium (Dissolved)	U	1450	10:1	µg/l	1.0		1.8	1.3
Vanadium (Dissolved)	U	1450	10:1	µg/l	1.0		9.6	8.6
Zinc (Dissolved)	U	1450	10:1	µg/l	1.0		22	2.9
Chromium (Hexavalent)	U	1490	10:1	µg/l	20		[B] < 20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] 25	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 25	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] 17	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10

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Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
Aromatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C35-C44	N	1680	10:1	µg/l	50.00		[B] < 50	[B] < 50
Total Aromatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 17	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	10:1	µg/l	10		[B] 42	[B] < 10
Dichlorodifluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Chloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Vinyl Chloride	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromomethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromochloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Trichloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Benzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichloroethene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Dibromomethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Bromodichloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Toluene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,1,2-Trichloroethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Tetrachloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Dibromochloromethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,2-Dibromoethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chlorobenzene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Ethylbenzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
m & p-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
o-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Styrene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Tribromomethane	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	1760	10:1	µg/l	50	[B] < 50	[B] < 50
N-Propylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	U	1760	10:1	µg/l	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	U	1760	10:1	µg/l	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Phenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Naphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Benzo[a]pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluorene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Chrysene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Coronene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Total Of 17 PAH's	N	1800	10:1	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030	< 0.030

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-			Fibres/Clumps	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected			Chrysotile	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-		-			Stereo Microscopy	-		-
Moisture	N	2030	%	0.020	17	6.7	32	23	18	19	17	16	11
Soil Colour	N	2040		N/A	Black		Brown			Brown	Brown		Brown
Other Material	N	2040		N/A	Stones		Stones			Stones	Stones		Stones
Soil Texture	N	2040		N/A	Clay		Sand			Clay	Clay		Sand
pH	M	2010		N/A	8.0		7.9			8.0	8.4		8.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.45		0.43			0.92	0.56		< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	1.0		0.30			0.90	0.54		0.16
Total Sulphur	M	2175	%	0.010	0.015		0.31			0.12	0.074		0.14
Chloride (Water Soluble)	M	2220	g/l	0.010	0.012		< 0.010			0.034	0.024		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	4.0		3.5			13	17		29
Arsenic	M	2450	mg/kg	1.0	18		14			16	14		3.4
Barium	M	2450	mg/kg	10	180		130			140	180		72
Beryllium	U	2450	mg/kg	1.0	1.4		1.0			< 1.0	< 1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10	1.2		0.58			0.20	0.27		< 0.10
Chromium	M	2450	mg/kg	1.0	29		25			32	27		17
Copper	M	2450	mg/kg	0.50	68		68			59	42		7.7
Mercury	M	2450	mg/kg	0.10	0.30		0.29			0.30	0.15		< 0.10
Nickel	M	2450	mg/kg	0.50	24		28			34	29		11
Lead	M	2450	mg/kg	0.50	160		100			110	77		19
Selenium	M	2450	mg/kg	0.20	0.35		0.33			< 0.20	0.26		< 0.20
Vanadium	U	2450	mg/kg	5.0	33		34			55	31		21
Zinc	M	2450	mg/kg	0.50	140		110			200	81		22
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.030		0.038			0.024	0.016		0.0048
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 7.4		[B] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 13		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 42		[B] 24			[B] 33	[B] 27		[B] 13

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 43		[B] 24			[B] 33	[B] 47		[B] 13
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] 5.2		[B] < 1.0			[B] < 1.0	[B] 10		[B] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 190		[B] 31			[B] 1.2	[B] 78		[B] 25
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 190		[B] 31			[B] < 5.0	[B] 88		[B] 25
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 230		[B] 55			[B] 34	[B] 140		[B] 38
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromomethane	M	2760	µg/kg	20		[B] < 20			[B] < 20			[B] < 20	
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Benzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
Toluene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10				[B] < 10			[B] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0				[B] < 5.0			[B] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Styrene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50				[B] < 50			[B] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50				[B] < 50			[B] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0				[B] < 2.0			[B] < 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0				[B] < 1.0			[B] < 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Phenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 1.9			[B] < 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 0.68			[B] < 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50			[B] 0.63			[B] < 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Phenanthrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 3.0			[B] 1.1	
Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.75			[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.8			[B] 3.3	
Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.2			[B] 2.7	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.5	
Chrysene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.3			[B] 1.7	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.7	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.66	
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.97			[B] 1.4	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.62	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.72	
Naphthalene	N	2800	mg/kg	0.010	0.44		< 0.010	0.49		0.93	0.17		< 0.010	
Acenaphthylene	N	2800	mg/kg	0.010	0.43		0.030	0.050		0.080	0.060		< 0.010	
Acenaphthene	N	2800	mg/kg	0.010	0.62		< 0.010	0.29		0.92	0.40		< 0.010	
Fluorene	N	2800	mg/kg	0.010	0.59		< 0.010	0.28		0.58	0.36		< 0.010	
Phenanthrene	N	2800	mg/kg	0.010	6.9		1.8	1.8		4.0	6.0		0.47	
Anthracene	N	2800	mg/kg	0.010	1.3		0.24	0.43		0.92	1.5		0.050	
Fluoranthene	N	2800	mg/kg	0.010	7.9		1.9	2.6		5.2	7.8		1.1	
Pyrene	N	2800	mg/kg	0.010	7.5		1.6	2.2		4.8	6.9		0.98	
Benzo[a]anthracene	N	2800	mg/kg	0.010	3.4		0.51	0.87		1.9	2.9		0.22	
Chrysene	N	2800	mg/kg	0.010	4.2		0.84	1.2		2.7	3.2		0.31	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	4.0		0.73	1.1		3.1	3.0		< 0.010	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	1.4		0.21	0.41		0.78	1.1		< 0.010	
Benzo[a]pyrene	N	2800	mg/kg	0.010	3.1		0.33	0.74		2.0	2.4		< 0.010	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	2.3		0.35	0.57		1.5	1.6		< 0.010	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.34		0.010	0.050		0.20	0.17		< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	2.4		0.47	0.61		1.7	1.6		< 0.010	
Coronene	N	2800	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	47		9.0	14		31	39		3.1	
Total Phenols	M	2920	mg/kg	0.30	< 0.30		< 0.30			< 0.30	< 0.30		< 0.30	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:			BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):			4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:			LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-			Fibres/Clumps	-	-			
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected			Amosite	No Asbestos Detected	No Asbestos Detected			
ACM Detection Stage	U	2192		N/A	-			Stereo Microscopy	-	-			
Moisture	N	2030	%	0.020	18	17	19	17	12	13	18	19	13
Soil Colour	N	2040		N/A	Black			Brown	Brown	Black			
Other Material	N	2040		N/A	Stones			Stones	Stones	Stones			
Soil Texture	N	2040		N/A	Sand			Clay	Loam	Clay			
pH	M	2010		N/A	8.1			8.1	5.4	7.7			
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.3			< 0.40	< 0.40	0.57			
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.12		1.3	0.20	< 0.010	0.94			0.94
Total Sulphur	M	2175	%	0.010	0.042		0.20	0.10	0.016	0.20			0.17
Chloride (Water Soluble)	M	2220	g/l	0.010	< 0.010			0.016	< 0.010	< 0.010			
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50			[B] < 0.50	[B] < 0.50	[B] < 0.50			
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50			[B] < 0.50	[B] < 0.50	[B] < 0.50			
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	10			27	1.7	7.0			
Arsenic	M	2450	mg/kg	1.0	22			14	6.9	14			
Barium	M	2450	mg/kg	10	170			140	52	150			
Beryllium	U	2450	mg/kg	1.0	< 1.0			1.2	< 1.0	< 1.0			
Cadmium	M	2450	mg/kg	0.10	0.70			0.64	< 0.10	0.34			
Chromium	M	2450	mg/kg	1.0	150			22	19	30			
Copper	M	2450	mg/kg	0.50	95			74	19	41			
Mercury	M	2450	mg/kg	0.10	0.31			0.15	< 0.10	0.15			
Nickel	M	2450	mg/kg	0.50	25			31	18	23			
Lead	M	2450	mg/kg	0.50	140			54	12	74			
Selenium	M	2450	mg/kg	0.20	0.31			0.41	0.24	0.34			
Vanadium	U	2450	mg/kg	5.0	38			28	22	28			
Zinc	M	2450	mg/kg	0.50	140			68	40	96			
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50			< 0.50	< 0.50	< 0.50			
Fraction of Organic Carbon	M	2625		0.0010	0.060			0.017	0.0041	0.020			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 17			[B] 30	[B] < 1.0	[B] < 1.0			

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:			BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):			4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:			LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 17			[B] 30	[B] < 5.0	[B] < 5.0			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0			[B] 4.4	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 25			[B] 67	[B] < 1.0	[B] < 1.0			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 25			[B] 71	[B] < 5.0	[B] < 5.0			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 42			[B] 100	[B] < 10	[B] < 10			
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Bromomethane	M	2760	µg/kg	20		[B] < 20					[B] < 20		
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0		
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Benzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0		
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10					[B] < 10		
Toluene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10					[B] < 10		
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10					[B] < 10		
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10					[B] < 10		
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0		
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Styrene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50					[B] < 50		
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50					[B] < 50		
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Phenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:			BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):			4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:			LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Phenanthrene	M	2790	mg/kg	0.50		[B] 2.8					[B] 1.1		
Anthracene	M	2790	mg/kg	0.50		[B] 0.67					[B] < 0.50		
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Fluoranthene	M	2790	mg/kg	0.50		[B] 4.0					[B] 1.5		
Pyrene	M	2790	mg/kg	0.50		[B] 3.2					[B] 1.2		
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.82		
Chrysene	M	2790	mg/kg	0.50		[B] 1.7					[B] 0.96		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.91		
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] 0.85					[B] < 0.50		
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] 1.6					[B] 0.67		
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] 0.68					[B] < 0.50		
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] 0.81					[B] < 0.50		
Naphthalene	N	2800	mg/kg	0.010	0.37			< 0.010	< 0.010	0.76		1.3	
Acenaphthylene	N	2800	mg/kg	0.010	0.10			< 0.010	< 0.010	0.14		0.13	
Acenaphthene	N	2800	mg/kg	0.010	0.43			< 0.010	< 0.010	0.45		0.41	
Fluorene	N	2800	mg/kg	0.010	0.31			< 0.010	< 0.010	0.27		0.39	
Phenanthrene	N	2800	mg/kg	0.010	3.3			0.89	< 0.010	3.6		3.2	
Anthracene	N	2800	mg/kg	0.010	0.70			0.13	< 0.010	0.48		0.65	
Fluoranthene	N	2800	mg/kg	0.010	4.5			0.99	< 0.010	4.8		2.7	
Pyrene	N	2800	mg/kg	0.010	4.3			1.0	< 0.010	4.8		2.4	
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.9			0.15	< 0.010	0.93		0.89	
Chrysene	N	2800	mg/kg	0.010	2.4			0.22	< 0.010	1.5		1.3	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.4			< 0.010	< 0.010	1.2		1.2	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.83			< 0.010	< 0.010	0.20		0.38	
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.8			< 0.010	< 0.010	0.51		0.73	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	1.5			< 0.010	< 0.010	0.23		0.53	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.17			< 0.010	< 0.010	0.020		< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	1.6			< 0.010	< 0.010	0.53		0.63	
Coronene	N	2800	mg/kg	0.010	< 0.010			< 0.010	< 0.010	< 0.010		< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	27			3.4	< 0.20	20		17	
Total Phenols	M	2920	mg/kg	0.30	< 0.30			< 0.30	< 0.30	< 0.30			

Chemtest
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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:	LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-		-	-	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-		-	-	-		-
Moisture	N	2030	%	0.020	14	16	23	22	13	17	15	11
Soil Colour	N	2040		N/A	Brown	Brown		Black	Brown	Brown		Grey
Other Material	N	2040		N/A	Stones	Stones, Brick		Stones	Stones	Stones		Stones
Soil Texture	N	2040		N/A	Clay	Clay		Sand	Clay	Clay		Sand
pH	M	2010		N/A	8.2	7.9		7.5	7.7	8.0		7.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.96	1.6		0.65	< 0.40	1.7		1.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.35	0.43		0.040	< 0.010	0.022		< 0.010
Total Sulphur	M	2175	%	0.010	0.11	0.10		0.073	0.030	0.095		0.031
Chloride (Water Soluble)	M	2220	g/l	0.010	0.022	0.024		< 0.010	< 0.010	< 0.010		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] 1.4	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	11	5.0		2.4	1.9	2.7		0.75
Arsenic	M	2450	mg/kg	1.0	15	12		19	16	18		2.5
Barium	M	2450	mg/kg	10	230	130		180	320	200		110
Beryllium	U	2450	mg/kg	1.0	1.1	< 1.0		< 1.0	< 1.0	1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10	0.35	0.24		0.38	0.12	0.38		0.10
Chromium	M	2450	mg/kg	1.0	25	23		40	17	39		20
Copper	M	2450	mg/kg	0.50	54	47		42	17	73		21
Mercury	M	2450	mg/kg	0.10	0.42	0.17		0.24	< 0.10	0.34		< 0.10
Nickel	M	2450	mg/kg	0.50	26	27		18	26	54		20
Lead	M	2450	mg/kg	0.50	120	63		90	16	130		16
Selenium	M	2450	mg/kg	0.20	0.36	0.29		0.52	0.30	0.40		0.26
Vanadium	U	2450	mg/kg	5.0	34	29		38	18	60		23
Zinc	M	2450	mg/kg	0.50	100	70		74	35	120		41
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.021	0.024		0.043	0.011	0.046		0.011
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 21	[B] 12		[B] 28	[B] < 1.0	[B] 12		[B] < 1.0

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:			LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 21	[B] 12		[B] 28	[B] < 5.0	[B] 12		[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] 2.0	[B] < 1.0	[B] 8.2		[B] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 50	[B] 22		[B] 41	[B] < 1.0	[B] 53		[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 51	[B] 22		[B] 43	[B] < 5.0	[B] 62		[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 72	[B] 34		[B] 71	[B] < 10	[B] 74		[B] < 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Chloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromomethane	M	2760	µg/kg	20			[B] < 20				[B] < 20	
Chloroethane	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Benzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10			[B] < 10				[B] < 10	
Toluene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10			[B] < 10				[B] < 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10			[B] < 10				[B] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	

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Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:	LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,3-Dichloropropane	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10			[B] < 10				[B] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
o-Xylene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Styrene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50			[B] < 50				[B] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50			[B] < 50				[B] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Phenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	

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Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:	LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachloroethane	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Nitrobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Isophorone	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Naphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Acenaphthylene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Acenaphthene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dibenzofuran	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Fluorene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Azobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:			LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Phenanthrene	M	2790	mg/kg	0.50			[B] 1.1				[B] 0.73	
Anthracene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50			[B] 2.1				[B] 1.5	
Pyrene	M	2790	mg/kg	0.50			[B] 1.8				[B] 1.2	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50			[B] 1.2				[B] 0.71	
Chrysene	M	2790	mg/kg	0.50			[B] 1.4				[B] 0.91	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50			[B] 1.6				[B] 0.93	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50			[B] 1.1				[B] 0.72	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Naphthalene	N	2800	mg/kg	0.010	1.3	< 0.010		< 0.010	< 0.010	0.60		< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.20	< 0.010		< 0.010	< 0.010	0.090		< 0.010
Acenaphthene	N	2800	mg/kg	0.010	0.60	< 0.010		< 0.010	< 0.010	0.52		< 0.010
Fluorene	N	2800	mg/kg	0.010	0.60	< 0.010		< 0.010	< 0.010	0.32		< 0.010
Phenanthrene	N	2800	mg/kg	0.010	4.7	1.1		1.1	< 0.010	4.0		< 0.010
Anthracene	N	2800	mg/kg	0.010	1.1	0.13		0.14	< 0.010	0.75		< 0.010
Fluoranthene	N	2800	mg/kg	0.010	4.8	1.3		2.2	< 0.010	6.6		< 0.010
Pyrene	N	2800	mg/kg	0.010	5.3	1.1		1.9	< 0.010	6.4		< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.7	0.25		0.47	< 0.010	2.4		< 0.010
Chrysene	N	2800	mg/kg	0.010	2.3	0.40		0.71	< 0.010	2.9		< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.0	< 0.010		0.69	< 0.010	3.6		< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.55	< 0.010		0.21	< 0.010	1.1		< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.4	< 0.010		0.33	< 0.010	2.2		< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	0.86	< 0.010		0.25	< 0.010	1.7		< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.060	< 0.010		0.010	< 0.010	0.24		< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	1.1	< 0.010		0.40	< 0.010	1.9		< 0.010
Coronene	N	2800	mg/kg	0.010	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
Total Of 17 PAH's	N	2800	mg/kg	0.20	29	4.3		8.4	< 0.20	35		< 0.20
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30		< 0.30	< 0.30	< 0.30		< 0.30

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848704		BH302/D1		19-Jun-2019	B	Amber Glass 250ml
848704		BH302/D1		19-Jun-2019	B	Amber Glass 60ml
848704		BH302/D1		19-Jun-2019	B	Plastic Tub 500g
848705		BH302/D2		19-Jun-2019	B	Amber Glass 250ml
848705		BH302/D2		19-Jun-2019	B	Amber Glass 60ml
848705		BH302/D2		19-Jun-2019	B	Plastic Tub 500g
848706		BH302/D3		19-Jun-2019	B	Amber Glass 250ml
848706		BH302/D3		19-Jun-2019	B	Amber Glass 60ml
848706		BH302/D3		19-Jun-2019	B	Plastic Tub 500g
848707		BH302/D4		19-Jun-2019	B	Amber Glass 250ml
848707		BH302/D4		19-Jun-2019	B	Amber Glass 60ml
848707		BH302/D4		19-Jun-2019	B	Plastic Tub 500g
848708		BH302/D5		19-Jun-2019	B	Amber Glass 250ml
848708		BH302/D5		19-Jun-2019	B	Amber Glass 60ml
848708		BH302/D5		19-Jun-2019	B	Plastic Tub 500g
848709		BH302/D6		19-Jun-2019	B	Amber Glass 250ml
848709		BH302/D6		19-Jun-2019	B	Amber Glass 60ml
848709		BH302/D6		19-Jun-2019	B	Plastic Tub 500g
848711		BH306/D1		19-Jun-2019	B	Amber Glass 250ml
848711		BH306/D1		19-Jun-2019	B	Amber Glass 60ml
848711		BH306/D1		19-Jun-2019	B	Plastic Tub 500g
848712		BH306/D2		19-Jun-2019	B	Amber Glass 250ml
848712		BH306/D2		19-Jun-2019	B	Amber Glass 60ml
848712		BH306/D2		19-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848713		BH306/D3		19-Jun-2019	B	Amber Glass 250ml
848713		BH306/D3		19-Jun-2019	B	Amber Glass 60ml
848713		BH306/D3		19-Jun-2019	B	Plastic Tub 500g
848714		BH306/D4		19-Jun-2019	B	Amber Glass 250ml
848714		BH306/D4		19-Jun-2019	B	Amber Glass 60ml
848714		BH306/D4		19-Jun-2019	B	Plastic Tub 500g
848715		BH306/D5		19-Jun-2019	B	Amber Glass 250ml
848715		BH306/D5		19-Jun-2019	B	Amber Glass 60ml
848715		BH306/D5		19-Jun-2019	B	Plastic Tub 500g
848717		BH306/D7		19-Jun-2019	B	Amber Glass 250ml
848717		BH306/D7		19-Jun-2019	B	Amber Glass 60ml
848717		BH306/D7		19-Jun-2019	B	Plastic Tub 500g
848718		BH306/D8		19-Jun-2019	B	Amber Glass 250ml
848718		BH306/D8		19-Jun-2019	B	Amber Glass 60ml
848718		BH306/D8		19-Jun-2019	B	Plastic Tub 500g
848720		BH304/D1		20-Jun-2019	B	Amber Glass 250ml
848720		BH304/D1		20-Jun-2019	B	Amber Glass 60ml
848720		BH304/D1		20-Jun-2019	B	Plastic Tub 500g
848721		BH304/D2		20-Jun-2019	B	Amber Glass 250ml
848721		BH304/D2		20-Jun-2019	B	Amber Glass 60ml
848721		BH304/D2		20-Jun-2019	B	Plastic Tub 500g
848722		BH304/D3		20-Jun-2019	B	Amber Glass 250ml
848722		BH304/D3		20-Jun-2019	B	Amber Glass 60ml
848722		BH304/D3		20-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848724		BH304/D5		20-Jun-2019	B	Amber Glass 250ml
848724		BH304/D5		20-Jun-2019	B	Amber Glass 60ml
848724		BH304/D5		20-Jun-2019	B	Plastic Tub 500g
848726		BH304/D7		20-Jun-2019	B	Amber Glass 250ml
848726		BH304/D7		20-Jun-2019	B	Amber Glass 60ml
848726		BH304/D7		20-Jun-2019	B	Plastic Tub 500g
848729		BH303/D1		21-Jun-2019	B	Amber Glass 250ml
848729		BH303/D1		21-Jun-2019	B	Amber Glass 60ml
848729		BH303/D1		21-Jun-2019	B	Plastic Tub 500g
848730		BH303/D2		21-Jun-2019	B	Amber Glass 250ml
848730		BH303/D2		21-Jun-2019	B	Amber Glass 60ml
848730		BH303/D2		21-Jun-2019	B	Plastic Tub 500g
848731		BH303/D3		21-Jun-2019	B	Amber Glass 250ml
848731		BH303/D3		21-Jun-2019	B	Amber Glass 60ml
848731		BH303/D3		21-Jun-2019	B	Plastic Tub 500g
848735		BH305/D1		21-Jun-2019	B	Amber Glass 250ml
848735		BH305/D1		21-Jun-2019	B	Amber Glass 60ml
848735		BH305/D1		21-Jun-2019	B	Plastic Tub 500g
848736		BH305/D2		21-Jun-2019	B	Amber Glass 250ml
848736		BH305/D2		21-Jun-2019	B	Amber Glass 60ml
848736		BH305/D2		21-Jun-2019	B	Plastic Tub 500g
848737		BH305/D3		21-Jun-2019	B	Amber Glass 250ml
848737		BH305/D3		21-Jun-2019	B	Amber Glass 60ml
848737		BH305/D3		21-Jun-2019	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1680	Fatty Acids	Fatty Acids	GCMS detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.

Test Methods

SOP	Title	Parameters included	Method summary
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	19-21411-6		
Initial Date of Issue:	16-Jul-2019	**Date of Re-Issue:**	21-Aug-2019
Client	LK Consult		
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS		
Contact(s):	Colin Crompton Contaminated Land		
Project	LKC 19 1015 Junction 19, Heywood		
Quotation No.:		**Date Received:**	25-Jun-2019
Order No.:	736981	**Date Instructed:**	09-Jul-2019
No. of Samples:	26		
Turnaround (Wkdays):	32	**Results Due:**	21-Aug-2019
Date Approved:	21-Aug-2019		

Approved By:



Details: Martin Dyer, Laboratory Manager
Robert Monk, Technical Manager

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Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
pH	U	1010	10:1		N/A		8.6	8.7
Electrical Conductivity	U	1020	10:1	µS/cm	1.0		1100	420
Chloride	U	1220	10:1	mg/l	1.0		2.6	4.1
Ammoniacal Nitrogen	U	1220	10:1	mg/l	0.050		1.6	0.13
Nitrate	U	1220	10:1	mg/l	0.50		6.2	2.2
Sulphur	N	1220	10:1	mg/l	1.0		160	37
Sulphate	U	1220	10:1	mg/l	1.0		470	110
Cyanide (Total)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Cyanide (Free)	U	1300	10:1	mg/l	0.050		< 0.050	< 0.050
Sulphide	U	1325	10:1	mg/l	0.050		< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	10:1	µg/l	1.0		4.8	2.5
Boron (Dissolved)	U	1450	10:1	µg/l	20		110	40
Barium (Dissolved)	U	1450	10:1	µg/l	5.0		54	27
Beryllium (Dissolved)	U	1450	10:1	µg/l	1.0		< 1.0	< 1.0
Cadmium (Dissolved)	U	1450	10:1	µg/l	0.080		0.087	< 0.080
Chromium (Dissolved)	U	1450	10:1	µg/l	1.0		27	23
Copper (Dissolved)	U	1450	10:1	µg/l	1.0		1.2	2.3
Mercury (Dissolved)	U	1450	10:1	µg/l	0.50		< 0.50	< 0.50
Nickel (Dissolved)	U	1450	10:1	µg/l	1.0		2.3	< 1.0
Lead (Dissolved)	U	1450	10:1	µg/l	1.0		2.1	< 1.0
Selenium (Dissolved)	U	1450	10:1	µg/l	1.0		1.8	1.3
Vanadium (Dissolved)	U	1450	10:1	µg/l	1.0		9.6	8.6
Zinc (Dissolved)	U	1450	10:1	µg/l	1.0		22	2.9
Chromium (Hexavalent)	U	1490	10:1	µg/l	20		[B] < 20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] 25	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 25	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	10:1	µg/l	0.10		[B] 17	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult						**Chemtest Job No.:**	19-21411	19-21411
Quotation No.:						**Chemtest Sample ID.:**	848707	848722
						Client Sample ID.:	BH302/D4	BH304/D3
						Sample Type:	SOIL	SOIL
						Top Depth (m):	2.00	1.20
						Bottom Depth (m):	3.00	2.00
						Date Sampled:	19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
Aromatic TPH >C21-C35	N	1675	10:1	µg/l	0.10		[B] < 0.10	[B] < 0.10
Aromatic TPH >C35-C44	N	1680	10:1	µg/l	50.00		[B] < 50	[B] < 50
Total Aromatic Hydrocarbons	N	1675	10:1	µg/l	5.0		[B] 17	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	10:1	µg/l	10		[B] 42	[B] < 10
Dichlorodifluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Chloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Vinyl Chloride	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromomethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Bromochloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Trichloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Benzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Trichloroethene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Dibromomethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Bromodichloromethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Toluene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,1,2-Trichloroethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
Tetrachloroethene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Dibromochloromethane	U	1760	10:1	µg/l	10		[B] < 10	[B] < 10
1,2-Dibromoethane	U	1760	10:1	µg/l	5.0		[B] < 5.0	[B] < 5.0
Chlorobenzene	N	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	1760	10:1	µg/l	2.0		[B] < 2.0	[B] < 2.0
Ethylbenzene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
m & p-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
o-Xylene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0
Styrene	U	1760	10:1	µg/l	1.0		[B] < 1.0	[B] < 1.0

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Tribromomethane	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	1760	10:1	µg/l	50	[B] < 50	[B] < 50
N-Propylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	U	1760	10:1	µg/l	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	U	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	U	1760	10:1	µg/l	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	N	1760	10:1	µg/l	1.0	[B] < 1.0	[B] < 1.0
Phenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Naphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**		19-21411	19-21411
Quotation No.:				**Chemtest Sample ID.:**		848707	848722
				Client Sample ID.:		BH302/D4	BH304/D3
				Sample Type:		SOIL	SOIL
				Top Depth (m):		2.00	1.20
				Bottom Depth (m):		3.00	2.00
				Date Sampled:		19-Jun-2019	20-Jun-2019
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Benzo[a]pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	10:1	µg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluorene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Chrysene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Coronene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010
Total Of 17 PAH's	N	1800	10:1	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030	< 0.030

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-		-			Fibres/Clumps	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected			Chrysotile	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-		-			Stereo Microscopy	-		-
Asbestos by Gravimetry	U	2192	%	0.001									
Total Asbestos	N	2192	%	0.001									
Moisture	N	2030	%	0.020	17	6.7	32	23	18	19	17	16	11
Soil Colour	N	2040		N/A	Black		Brown			Brown	Brown		Brown
Other Material	N	2040		N/A	Stones		Stones			Stones	Stones		Stones
Soil Texture	N	2040		N/A	Clay		Sand			Clay	Clay		Sand
pH	M	2010		N/A	8.0		7.9			8.0	8.4		8.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.45		0.43			0.92	0.56		< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	1.0		0.30			0.90	0.54		0.16
Total Sulphur	M	2175	%	0.010	0.015		0.31			0.12	0.074		0.14
Chloride (Water Soluble)	M	2220	g/l	0.010	0.012		< 0.010			0.034	0.024		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50		[B] < 0.50			[B] 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	4.0		3.5			13	17		29
Arsenic	M	2450	mg/kg	1.0	18		14			16	14		3.4
Barium	M	2450	mg/kg	10	180		130			140	180		72
Beryllium	U	2450	mg/kg	1.0	1.4		1.0			< 1.0	< 1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10	1.2		0.58			0.20	0.27		< 0.10
Chromium	M	2450	mg/kg	1.0	29		25			32	27		17
Copper	M	2450	mg/kg	0.50	68		68			59	42		7.7
Mercury	M	2450	mg/kg	0.10	0.30		0.29			0.30	0.15		< 0.10
Nickel	M	2450	mg/kg	0.50	24		28			34	29		11
Lead	M	2450	mg/kg	0.50	160		100			110	77		19
Selenium	M	2450	mg/kg	0.20	0.35		0.33			< 0.20	0.26		< 0.20
Vanadium	U	2450	mg/kg	5.0	33		34			55	31		21
Zinc	M	2450	mg/kg	0.50	140		110			200	81		22
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50			< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.030		0.038			0.024	0.016		0.0048
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 7.4		[B] < 1.0

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848704	848705	848706	848707	848708	848709	848711	848712	848713
		Client Sample ID.:			BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
		Bottom Depth (m):			0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
		Asbestos Lab:			LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] 13		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 42		[B] 24			[B] 33	[B] 27		[B] 13
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 43		[B] 24			[B] 33	[B] 47		[B] 13
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] 5.2		[B] < 1.0			[B] < 1.0	[B] 10		[B] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 190		[B] 31			[B] 1.2	[B] 78		[B] 25
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0		[B] < 1.0			[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 190		[B] 31			[B] < 5.0	[B] 88		[B] 25
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 230		[B] 55			[B] 34	[B] 140		[B] 38
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromomethane	M	2760	µg/kg	20		[B] < 20			[B] < 20			[B] < 20	
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Benzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	
Toluene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10		
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0		
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10			[B] < 10			[B] < 10		
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0			[B] < 5.0			[B] < 5.0		
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0		
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Styrene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50			[B] < 50			[B] < 50		
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50			[B] < 50			[B] < 50		
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0			[B] < 2.0			[B] < 2.0		
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0			[B] < 1.0			[B] < 1.0		
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Phenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50			[B] < 0.50			[B] < 0.50		

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.9			[B] < 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.68			[B] < 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.63			[B] < 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848704	848705	848706	848707	848708	848709	848711	848712	848713
					Client Sample ID.:	BH302/D1	BH302/D2	BH302/D3	BH302/D4	BH302/D5	BH302/D6	BH306/D1	BH306/D2	BH306/D3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.00	0.60	1.20	2.00	3.00	4.00	0.00	0.50	1.20
					Bottom Depth (m):	0.60	1.20	2.00	3.00	4.00	5.00	0.50	1.20	2.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019
					Asbestos Lab:	LIVERPOOL		LIVERPOOL			LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Phenanthrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 3.0			[B] 1.1	
Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.75			[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.8			[B] 3.3	
Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 2.2			[B] 2.7	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.5	
Chrysene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.3			[B] 1.7	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 1.2			[B] 1.7	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.66	
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] 0.97			[B] 1.4	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.62	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] < 0.50				[B] < 0.50			[B] 0.72	
Naphthalene	N	2800	mg/kg	0.010	0.44		< 0.010	0.49		0.93	0.17		< 0.010	
Acenaphthylene	N	2800	mg/kg	0.010	0.43		0.030	0.050		0.080	0.060		< 0.010	
Acenaphthene	N	2800	mg/kg	0.010	0.62		< 0.010	0.29		0.92	0.40		< 0.010	
Fluorene	N	2800	mg/kg	0.010	0.59		< 0.010	0.28		0.58	0.36		< 0.010	
Phenanthrene	N	2800	mg/kg	0.010	6.9		1.8	1.8		4.0	6.0		0.47	
Anthracene	N	2800	mg/kg	0.010	1.3		0.24	0.43		0.92	1.5		0.050	
Fluoranthene	N	2800	mg/kg	0.010	7.9		1.9	2.6		5.2	7.8		1.1	
Pyrene	N	2800	mg/kg	0.010	7.5		1.6	2.2		4.8	6.9		0.98	
Benzo[a]anthracene	N	2800	mg/kg	0.010	3.4		0.51	0.87		1.9	2.9		0.22	
Chrysene	N	2800	mg/kg	0.010	4.2		0.84	1.2		2.7	3.2		0.31	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	4.0		0.73	1.1		3.1	3.0		< 0.010	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	1.4		0.21	0.41		0.78	1.1		< 0.010	
Benzo[a]pyrene	N	2800	mg/kg	0.010	3.1		0.33	0.74		2.0	2.4		< 0.010	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	2.3		0.35	0.57		1.5	1.6		< 0.010	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.34		0.010	0.050		0.20	0.17		< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	2.4		0.47	0.61		1.7	1.6		< 0.010	
Coronene	N	2800	mg/kg	0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	47		9.0	14		31	39		3.1	
Total Phenols	M	2920	mg/kg	0.30	< 0.30		< 0.30			< 0.30	< 0.30		< 0.30	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-			Fibres/Clumps	-	-			
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected			Amosite	No Asbestos Detected	No Asbestos Detected			
ACM Detection Stage	U	2192		N/A	-			Stereo Microscopy	-	-			
Asbestos by Gravimetry	U	2192	%	0.001				<0.001					
Total Asbestos	N	2192	%	0.001				<0.001					
Moisture	N	2030	%	0.020	18	17	19	17	12	13	18	19	13
Soil Colour	N	2040		N/A	Black			Brown	Brown	Black			
Other Material	N	2040		N/A	Stones			Stones	Stones	Stones			
Soil Texture	N	2040		N/A	Sand			Clay	Loam	Clay			
pH	M	2010		N/A	8.1			8.1	5.4	7.7			
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.3			< 0.40	< 0.40	0.57			
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.12		1.3	0.20	< 0.010	0.94			0.94
Total Sulphur	M	2175	%	0.010	0.042		0.20	0.10	0.016	0.20			0.17
Chloride (Water Soluble)	M	2220	g/l	0.010	< 0.010			0.016	< 0.010	< 0.010			
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50			[B] < 0.50	[B] < 0.50	[B] < 0.50			
Cyanide (Total)	M	2300	mg/kg	0.50	[B] < 0.50			[B] < 0.50	[B] < 0.50	[B] < 0.50			
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	10			27	1.7	7.0			
Arsenic	M	2450	mg/kg	1.0	22			14	6.9	14			
Barium	M	2450	mg/kg	10	170			140	52	150			
Beryllium	U	2450	mg/kg	1.0	< 1.0			1.2	< 1.0	< 1.0			
Cadmium	M	2450	mg/kg	0.10	0.70			0.64	< 0.10	0.34			
Chromium	M	2450	mg/kg	1.0	150			22	19	30			
Copper	M	2450	mg/kg	0.50	95			74	19	41			
Mercury	M	2450	mg/kg	0.10	0.31			0.15	< 0.10	0.15			
Nickel	M	2450	mg/kg	0.50	25			31	18	23			
Lead	M	2450	mg/kg	0.50	140			54	12	74			
Selenium	M	2450	mg/kg	0.20	0.31			0.41	0.24	0.34			
Vanadium	U	2450	mg/kg	5.0	38			28	22	28			
Zinc	M	2450	mg/kg	0.50	140			68	40	96			
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50			< 0.50	< 0.50	< 0.50			
Fraction of Organic Carbon	M	2625		0.0010	0.060			0.017	0.0041	0.020			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0			

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
					Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
					Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
					Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 17			[B] 30	[B] < 1.0	[B] < 1.0				
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 17			[B] 30	[B] < 5.0	[B] < 5.0				
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0			[B] 4.4	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 25			[B] 67	[B] < 1.0	[B] < 1.0				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0			[B] < 1.0	[B] < 1.0	[B] < 1.0				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 25			[B] 71	[B] < 5.0	[B] < 5.0				
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 42			[B] 100	[B] < 10	[B] < 10				
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Chloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Vinyl Chloride	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Bromomethane	M	2760	µg/kg	20		[B] < 20					[B] < 20			
Chloroethane	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0			
Trichlorofluoromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,1-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,1-Dichloroethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Bromochloromethane	U	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0			
Trichloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Tetrachloromethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,1-Dichloropropene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Benzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,2-Dichloroethane	M	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0			
Trichloroethene	N	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
1,2-Dichloropropane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Dibromomethane	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Bromodichloromethane	M	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0			
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10					[B] < 10			
Toluene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0			
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[B] < 10					[B] < 10			

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,1,2-Trichloroethane	M	2760	µg/kg	10		[B] < 10					[B] < 10		
Tetrachloroethene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,3-Dichloropropane	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Dibromochloromethane	U	2760	µg/kg	10		[B] < 10					[B] < 10		
1,2-Dibromoethane	M	2760	µg/kg	5.0		[B] < 5.0					[B] < 5.0		
Chlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Ethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
m & p-Xylene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
o-Xylene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Styrene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Tribromomethane	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Isopropylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Bromobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50		[B] < 50					[B] < 50		
N-Propylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
2-Chlorotoluene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
4-Chlorotoluene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
N-Butylbenzene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[B] < 50					[B] < 50		
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
Hexachlorobutadiene	U	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[B] < 2.0					[B] < 2.0		
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[B] < 1.0					[B] < 1.0		
N-Nitrosodimethylamine	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Phenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
2-Chlorophenol	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,3-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:					**Chemtest Sample ID.:**	848714	848715	848716	848717	848718	848720	848721	848722	848723
					Client Sample ID.:	BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
					Bottom Depth (m):	4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
					Date Sampled:	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
					Asbestos Lab:	LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
1,2-Dichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Hexachloroethane	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Nitrobenzene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Isophorone	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,4-Dichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Naphthalene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Hexachlorobutadiene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Methylnaphthalene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Chloronaphthalene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Acenaphthylene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Dimethylphthalate	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,6-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Acenaphthene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Dibenzofuran	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Chlorophenylphenylether	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2,4-Dinitrotoluene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Fluorene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Diethyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Nitroaniline	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
Azobenzene	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50		[B] < 0.50						[B] < 0.50		

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848714	848715	848716	848717	848718	848720	848721	848722	848723
		Client Sample ID.:			BH306/D4	BH306/D5	BH306/D6	BH306/D7	BH306/D8	BH304/D1	BH304/D2	BH304/D3	BH304/D4
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	5.00	6.00	8.00	0.00	0.50	1.20	2.00
		Bottom Depth (m):			4.00	5.00	6.00	7.00	8.50	0.50	1.20	2.00	3.00
		Date Sampled:			19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	19-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019	20-Jun-2019
		Asbestos Lab:			LIVERPOOL			LIVERPOOL	LIVERPOOL	LIVERPOOL			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Hexachlorobenzene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Phenanthrene	M	2790	mg/kg	0.50		[B] 2.8					[B] 1.1		
Anthracene	M	2790	mg/kg	0.50		[B] 0.67					[B] < 0.50		
Carbazole	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Fluoranthene	M	2790	mg/kg	0.50		[B] 4.0					[B] 1.5		
Pyrene	M	2790	mg/kg	0.50		[B] 3.2					[B] 1.2		
Butylbenzyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[a]anthracene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.82		
Chrysene	M	2790	mg/kg	0.50		[B] 1.7					[B] 0.96		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[b]fluoranthene	M	2790	mg/kg	0.50		[B] 1.8					[B] 0.91		
Benzo[k]fluoranthene	M	2790	mg/kg	0.50		[B] 0.85					[B] < 0.50		
Benzo[a]pyrene	M	2790	mg/kg	0.50		[B] 1.6					[B] 0.67		
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50		[B] 0.68					[B] < 0.50		
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50		[B] < 0.50					[B] < 0.50		
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50		[B] 0.81					[B] < 0.50		
Naphthalene	N	2800	mg/kg	0.010	0.37			< 0.010	< 0.010	0.76		1.3	
Acenaphthylene	N	2800	mg/kg	0.010	0.10			< 0.010	< 0.010	0.14		0.13	
Acenaphthene	N	2800	mg/kg	0.010	0.43			< 0.010	< 0.010	0.45		0.41	
Fluorene	N	2800	mg/kg	0.010	0.31			< 0.010	< 0.010	0.27		0.39	
Phenanthrene	N	2800	mg/kg	0.010	3.3			0.89	< 0.010	3.6		3.2	
Anthracene	N	2800	mg/kg	0.010	0.70			0.13	< 0.010	0.48		0.65	
Fluoranthene	N	2800	mg/kg	0.010	4.5			0.99	< 0.010	4.8		2.7	
Pyrene	N	2800	mg/kg	0.010	4.3			1.0	< 0.010	4.8		2.4	
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.9			0.15	< 0.010	0.93		0.89	
Chrysene	N	2800	mg/kg	0.010	2.4			0.22	< 0.010	1.5		1.3	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.4			< 0.010	< 0.010	1.2		1.2	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.83			< 0.010	< 0.010	0.20		0.38	
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.8			< 0.010	< 0.010	0.51		0.73	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	1.5			< 0.010	< 0.010	0.23		0.53	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.17			< 0.010	< 0.010	0.020		< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	1.6			< 0.010	< 0.010	0.53		0.63	
Coronene	N	2800	mg/kg	0.010	< 0.010			< 0.010	< 0.010	< 0.010		< 0.010	
Total Of 17 PAH's	N	2800	mg/kg	0.20	27			3.4	< 0.20	20		17	
Total Phenols	M	2920	mg/kg	0.30	< 0.30			< 0.30	< 0.30	< 0.30			

Chemtest
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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:			LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-		-	-	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-		-	-	-		-
Asbestos by Gravimetry	U	2192	%	0.001								
Total Asbestos	N	2192	%	0.001								
Moisture	N	2030	%	0.020	14	16	23	22	13	17	15	11
Soil Colour	N	2040		N/A	Brown	Brown		Black	Brown	Brown		Grey
Other Material	N	2040		N/A	Stones	Stones, Brick		Stones	Stones	Stones		Stones
Soil Texture	N	2040		N/A	Clay	Clay		Sand	Clay	Clay		Sand
pH	M	2010		N/A	8.2	7.9		7.5	7.7	8.0		7.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.96	1.6		0.65	< 0.40	1.7		1.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.35	0.43		0.040	< 0.010	0.022		< 0.010
Total Sulphur	M	2175	%	0.010	0.11	0.10		0.073	0.030	0.095		0.031
Chloride (Water Soluble)	M	2220	g/l	0.010	0.022	0.024		< 0.010	< 0.010	< 0.010		< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	[B] 1.4	[B] < 0.50		[B] < 0.50	[B] < 0.50	[B] < 0.50		[B] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	11	5.0		2.4	1.9	2.7		0.75
Arsenic	M	2450	mg/kg	1.0	15	12		19	16	18		2.5
Barium	M	2450	mg/kg	10	230	130		180	320	200		110
Beryllium	U	2450	mg/kg	1.0	1.1	< 1.0		< 1.0	< 1.0	1.0		< 1.0
Cadmium	M	2450	mg/kg	0.10	0.35	0.24		0.38	0.12	0.38		0.10
Chromium	M	2450	mg/kg	1.0	25	23		40	17	39		20
Copper	M	2450	mg/kg	0.50	54	47		42	17	73		21
Mercury	M	2450	mg/kg	0.10	0.42	0.17		0.24	< 0.10	0.34		< 0.10
Nickel	M	2450	mg/kg	0.50	26	27		18	26	54		20
Lead	M	2450	mg/kg	0.50	120	63		90	16	130		16
Selenium	M	2450	mg/kg	0.20	0.36	0.29		0.52	0.30	0.40		0.26
Vanadium	U	2450	mg/kg	5.0	34	29		38	18	60		23
Zinc	M	2450	mg/kg	0.50	100	70		74	35	120		41
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.021	0.024		0.043	0.011	0.046		0.011
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:			LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 21	[B] 12		[B] 28	[B] < 1.0	[B] 12		[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 21	[B] 12		[B] 28	[B] < 5.0	[B] 12		[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] 2.0	[B] < 1.0	[B] 8.2		[B] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[B] 50	[B] 22		[B] 41	[B] < 1.0	[B] 53		[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0	[B] < 1.0	[B] < 1.0		[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] 51	[B] 22		[B] 43	[B] < 5.0	[B] 62		[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] 72	[B] 34		[B] 71	[B] < 10	[B] 74		[B] < 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Chloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromomethane	M	2760	µg/kg	20			[B] < 20				[B] < 20	
Chloroethane	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Benzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10			[B] < 10				[B] < 10	
Toluene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10			[B] < 10				[B] < 10	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:	LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
1,1,2-Trichloroethane	M	2760	µg/kg	10			[B] < 10				[B] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10			[B] < 10				[B] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0			[B] < 5.0				[B] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
o-Xylene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Styrene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50			[B] < 50				[B] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50			[B] < 50				[B] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0			[B] < 2.0				[B] < 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0			[B] < 1.0				[B] < 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Phenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**	848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:	BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):	4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:	20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:	LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,2-Dichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachloroethane	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Nitrobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Isophorone	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Naphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Acenaphthylene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Acenaphthene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dibenzofuran	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Fluorene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Azobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	

Chemtest
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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411	19-21411
Quotation No.:		**Chemtest Sample ID.:**			848724	848726	848729	848730	848731	848735	848736	848737
		Client Sample ID.:			BH304/D5	BH304/D7	BH303/D1	BH303/D2	BH303/D3	BH305/D1	BH305/D2	BH305/D3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	5.00	0.00	0.50	0.80	0.00	0.30	0.50
		Bottom Depth (m):			4.00	6.00	0.50	0.80	1.20	0.30	0.50	1.20
		Date Sampled:			20-Jun-2019	20-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019	21-Jun-2019
		Asbestos Lab:			LIVERPOOL	LIVERPOOL		LIVERPOOL	LIVERPOOL	LIVERPOOL		LIVERPOOL
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Hexachlorobenzene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Phenanthrene	M	2790	mg/kg	0.50			[B] 1.1				[B] 0.73	
Anthracene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Carbazole	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Fluoranthene	M	2790	mg/kg	0.50			[B] 2.1				[B] 1.5	
Pyrene	M	2790	mg/kg	0.50			[B] 1.8				[B] 1.2	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50			[B] 1.2				[B] 0.71	
Chrysene	M	2790	mg/kg	0.50			[B] 1.4				[B] 0.91	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50			[B] 1.6				[B] 0.93	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50			[B] 1.1				[B] 0.72	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50			[B] < 0.50				[B] < 0.50	
Naphthalene	N	2800	mg/kg	0.010	1.3	< 0.010		< 0.010	< 0.010	0.60		< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.20	< 0.010		< 0.010	< 0.010	0.090		< 0.010
Acenaphthene	N	2800	mg/kg	0.010	0.60	< 0.010		< 0.010	< 0.010	0.52		< 0.010
Fluorene	N	2800	mg/kg	0.010	0.60	< 0.010		< 0.010	< 0.010	0.32		< 0.010
Phenanthrene	N	2800	mg/kg	0.010	4.7	1.1		1.1	< 0.010	4.0		< 0.010
Anthracene	N	2800	mg/kg	0.010	1.1	0.13		0.14	< 0.010	0.75		< 0.010
Fluoranthene	N	2800	mg/kg	0.010	4.8	1.3		2.2	< 0.010	6.6		< 0.010
Pyrene	N	2800	mg/kg	0.010	5.3	1.1		1.9	< 0.010	6.4		< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.7	0.25		0.47	< 0.010	2.4		< 0.010
Chrysene	N	2800	mg/kg	0.010	2.3	0.40		0.71	< 0.010	2.9		< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.0	< 0.010		0.69	< 0.010	3.6		< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.55	< 0.010		0.21	< 0.010	1.1		< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.4	< 0.010		0.33	< 0.010	2.2		< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	0.86	< 0.010		0.25	< 0.010	1.7		< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.060	< 0.010		0.010	< 0.010	0.24		< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	1.1	< 0.010		0.40	< 0.010	1.9		< 0.010
Coronene	N	2800	mg/kg	0.010	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010		< 0.010
Total Of 17 PAH's	N	2800	mg/kg	0.20	29	4.3		8.4	< 0.20	35		< 0.20
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30		< 0.30	< 0.30	< 0.30		< 0.30

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848704		BH302/D1		19-Jun-2019	B	Amber Glass 250ml
848704		BH302/D1		19-Jun-2019	B	Amber Glass 60ml
848704		BH302/D1		19-Jun-2019	B	Plastic Tub 500g
848705		BH302/D2		19-Jun-2019	B	Amber Glass 250ml
848705		BH302/D2		19-Jun-2019	B	Amber Glass 60ml
848705		BH302/D2		19-Jun-2019	B	Plastic Tub 500g
848706		BH302/D3		19-Jun-2019	B	Amber Glass 250ml
848706		BH302/D3		19-Jun-2019	B	Amber Glass 60ml
848706		BH302/D3		19-Jun-2019	B	Plastic Tub 500g
848707		BH302/D4		19-Jun-2019	B	Amber Glass 250ml
848707		BH302/D4		19-Jun-2019	B	Amber Glass 60ml
848707		BH302/D4		19-Jun-2019	B	Plastic Tub 500g
848708		BH302/D5		19-Jun-2019	B	Amber Glass 250ml
848708		BH302/D5		19-Jun-2019	B	Amber Glass 60ml
848708		BH302/D5		19-Jun-2019	B	Plastic Tub 500g
848709		BH302/D6		19-Jun-2019	B	Amber Glass 250ml
848709		BH302/D6		19-Jun-2019	B	Amber Glass 60ml
848709		BH302/D6		19-Jun-2019	B	Plastic Tub 500g
848711		BH306/D1		19-Jun-2019	B	Amber Glass 250ml
848711		BH306/D1		19-Jun-2019	B	Amber Glass 60ml
848711		BH306/D1		19-Jun-2019	B	Plastic Tub 500g
848712		BH306/D2		19-Jun-2019	B	Amber Glass 250ml
848712		BH306/D2		19-Jun-2019	B	Amber Glass 60ml
848712		BH306/D2		19-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848713		BH306/D3		19-Jun-2019	B	Amber Glass 250ml
848713		BH306/D3		19-Jun-2019	B	Amber Glass 60ml
848713		BH306/D3		19-Jun-2019	B	Plastic Tub 500g
848714		BH306/D4		19-Jun-2019	B	Amber Glass 250ml
848714		BH306/D4		19-Jun-2019	B	Amber Glass 60ml
848714		BH306/D4		19-Jun-2019	B	Plastic Tub 500g
848715		BH306/D5		19-Jun-2019	B	Amber Glass 250ml
848715		BH306/D5		19-Jun-2019	B	Amber Glass 60ml
848715		BH306/D5		19-Jun-2019	B	Plastic Tub 500g
848717		BH306/D7		19-Jun-2019	B	Amber Glass 250ml
848717		BH306/D7		19-Jun-2019	B	Amber Glass 60ml
848717		BH306/D7		19-Jun-2019	B	Plastic Tub 500g
848718		BH306/D8		19-Jun-2019	B	Amber Glass 250ml
848718		BH306/D8		19-Jun-2019	B	Amber Glass 60ml
848718		BH306/D8		19-Jun-2019	B	Plastic Tub 500g
848720		BH304/D1		20-Jun-2019	B	Amber Glass 250ml
848720		BH304/D1		20-Jun-2019	B	Amber Glass 60ml
848720		BH304/D1		20-Jun-2019	B	Plastic Tub 500g
848721		BH304/D2		20-Jun-2019	B	Amber Glass 250ml
848721		BH304/D2		20-Jun-2019	B	Amber Glass 60ml
848721		BH304/D2		20-Jun-2019	B	Plastic Tub 500g
848722		BH304/D3		20-Jun-2019	B	Amber Glass 250ml
848722		BH304/D3		20-Jun-2019	B	Amber Glass 60ml
848722		BH304/D3		20-Jun-2019	B	Plastic Tub 500g

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
848724		BH304/D5		20-Jun-2019	B	Amber Glass 250ml
848724		BH304/D5		20-Jun-2019	B	Amber Glass 60ml
848724		BH304/D5		20-Jun-2019	B	Plastic Tub 500g
848726		BH304/D7		20-Jun-2019	B	Amber Glass 250ml
848726		BH304/D7		20-Jun-2019	B	Amber Glass 60ml
848726		BH304/D7		20-Jun-2019	B	Plastic Tub 500g
848729		BH303/D1		21-Jun-2019	B	Amber Glass 250ml
848729		BH303/D1		21-Jun-2019	B	Amber Glass 60ml
848729		BH303/D1		21-Jun-2019	B	Plastic Tub 500g
848730		BH303/D2		21-Jun-2019	B	Amber Glass 250ml
848730		BH303/D2		21-Jun-2019	B	Amber Glass 60ml
848730		BH303/D2		21-Jun-2019	B	Plastic Tub 500g
848731		BH303/D3		21-Jun-2019	B	Amber Glass 250ml
848731		BH303/D3		21-Jun-2019	B	Amber Glass 60ml
848731		BH303/D3		21-Jun-2019	B	Plastic Tub 500g
848735		BH305/D1		21-Jun-2019	B	Amber Glass 250ml
848735		BH305/D1		21-Jun-2019	B	Amber Glass 60ml
848735		BH305/D1		21-Jun-2019	B	Plastic Tub 500g
848736		BH305/D2		21-Jun-2019	B	Amber Glass 250ml
848736		BH305/D2		21-Jun-2019	B	Amber Glass 60ml
848736		BH305/D2		21-Jun-2019	B	Plastic Tub 500g
848737		BH305/D3		21-Jun-2019	B	Amber Glass 250ml
848737		BH305/D3		21-Jun-2019	B	Amber Glass 60ml
848737		BH305/D3		21-Jun-2019	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1680	Fatty Acids	Fatty Acids	GCMS detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.

Test Methods

SOP	Title	Parameters included	Method summary
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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Report Information

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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Chemtest
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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	19-25234-1
Initial Date of Issue:	01-Aug-2019
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Colin Crompton Contaminated Land
Project	LKC 19 1015 Junction 19, Heywood

Quotation No.:		**Date Received:**	26-Jul-2019
Order No.:	736981	**Date Instructed:**	26-Jul-2019
No. of Samples:	19		
Turnaround (Wkdays):	5	**Results Due:**	01-Aug-2019
Date Approved:	01-Aug-2019		

Approved By:



Details:	Amy Parekh-Pross, Technical Projects Manager

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult				**Chemtest Job No.:**	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234
Quotation No.:				**Chemtest Sample ID.:**	864331	864332	864333	864334	864335	864336	864337	864338	864339
				Client Sample ID.:	BH1	BH1	BH2	BH2	BH3	BH4	BH4	BH301	BH301
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	2.00	6.50	2.00	4.00	3.00	6.70	1.20	1.20	4.00
				Bottom Depth (m):	2.45	6.95					1.65	1.65	4.45
				Date Sampled:	12-Jun-2019	12-Jun-2019	04-Jun-2019	04-Jun-2019	05-Jun-2019	10-Jun-2019	10-Jun-2019	14-Jun-2019	14-Jun-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	16	18	5.1	13	19	17	13	17	12
Soil Colour	N	2040		N/A	Brown	Brown	Yellow	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	NONE	NONE	Stones	NONE	NONE	NONE	NONE	NONE	NONE
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Clay	Clay	Clay	Sand	Sand	Clay
pH (2.5:1)	N	2010		N/A	[B] 8.0	[B] 8.4	[B] 7.1	[B] 8.2	[B] 7.8	[B] 8.4	[B] 7.0	[B] 7.0	[B] 8.5
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	0.020	< 0.010	< 0.010	< 0.010	0.020	< 0.010	0.032	< 0.010
Total Sulphur	M	2175	%	0.010	[B] 0.021	[B] 0.10	[B] 0.044	[B] 0.015	[B] 0.023	[B] 0.076	[B] 0.017	[B] 0.061	[B] 0.056
Chloride (Water Soluble)	M	2220	g/l	0.010									
Nitrate (Water Soluble)	N	2220	g/l	0.010									
Sulphate (Acid Soluble)	M	2430	%	0.010	[B] < 0.010	[B] 0.010	[B] 0.050	[B] < 0.010	[B] < 0.010	[B] 0.015	[B] < 0.010	[B] 0.019	[B] 0.012

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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234	19-25234
Quotation No.:					**Chemtest Sample ID.:**	864340	864341	864342	864343	864344	864345	864346	864347	864348
					Client Sample ID.:	BH302	BH302	BH303	BH303	BH304	BH304	BH305	WS02	WS03
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	3.00	9.50	2.00	6.00	5.00	7.10	3.00	3.00	1.20
					Bottom Depth (m):	4.00	9.95	2.45	6.45	5.45		3.45	3.45	1.65
					Date Sampled:	19-Jun-2019	19-Jun-2019	21-Jun-2019	21-Jun-2019	20-Jun-2019	20-Jun-2019	21-Jun-2019	07-Jun-2019	07-Jun-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Moisture	N	2030	%	0.020		13	7.4	10	14	16	13	8.3	13	14
Soil Colour	N	2040		N/A		Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A		Stones	Stones	Stones	NONE	Stones	NONE	Stones	NONE	NONE
Soil Texture	N	2040		N/A		Clay	Sand	Clay	Clay	Clay	Clay	Sand	Clay	Sand
pH (2.5:1)	N	2010		N/A		[B] 8.1	[B] 8.4	[B] 8.3	[B] 8.3	[B] 8.1	[B] 4.5	[B] 8.6	[B] 8.3	[B] 7.1
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.19	0.018	< 0.010	0.041	0.42	0.030	0.013	0.030	< 0.010
Total Sulphur	M	2175	%	0.010		[B] 0.14	[B] 0.084	[B] 0.031	[B] 0.073	[B] 0.22	[B] 0.030	[B] 0.062	[B] 0.066	[B] 0.027
Chloride (Water Soluble)	M	2220	g/l	0.010							[B] < 0.010			
Nitrate (Water Soluble)	N	2220	g/l	0.010							< 0.010			
Sulphate (Acid Soluble)	M	2430	%	0.010		[B] 0.11	[B] 0.018	[B] < 0.010	[B] 0.032	[B] 0.24	[B] 0.037	[B] < 0.010	[B] 0.014	[B] < 0.010

Chemtest
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Results - Soil

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult			**Chemtest Job No.:**		19-25234
Quotation No.:			**Chemtest Sample ID.:**		864349
			Client Sample ID.:		WS03
			Sample Type:		SOIL
			Top Depth (m):		4.00
			Bottom Depth (m):		4.50
			Date Sampled:		07-Jun-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	6.0
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	NONE
Soil Texture	N	2040		N/A	Sand
pH (2.5:1)	N	2010		N/A	[B] 7.5
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010
Total Sulphur	M	2175	%	0.010	[B] 0.015
Chloride (Water Soluble)	M	2220	g/l	0.010	
Nitrate (Water Soluble)	N	2220	g/l	0.010	
Sulphate (Acid Soluble)	M	2430	%	0.010	[B] < 0.010

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
864331		BH1		12-Jun-2019	B	Plastic Tub 500g
864332		BH1		12-Jun-2019	B	Plastic Tub 500g
864333		BH2		04-Jun-2019	B	Plastic Tub 500g
864334		BH2		04-Jun-2019	B	Plastic Tub 500g
864335		BH3		05-Jun-2019	B	Plastic Tub 500g
864336		BH4		10-Jun-2019	B	Plastic Tub 500g
864337		BH4		10-Jun-2019	B	Plastic Tub 500g
864338		BH301		14-Jun-2019	B	Plastic Tub 500g
864339		BH301		14-Jun-2019	B	Plastic Tub 500g
864340		BH302		19-Jun-2019	B	Plastic Tub 500g
864341		BH302		19-Jun-2019	B	Plastic Tub 500g
864342		BH303		21-Jun-2019	B	Plastic Tub 500g
864343		BH303		21-Jun-2019	B	Plastic Tub 500g
864344		BH304		20-Jun-2019	B	Plastic Tub 500g
864345		BH304		20-Jun-2019	B	Plastic Tub 500g
864346		BH305		21-Jun-2019	B	Plastic Tub 500g
864347		WS02		07-Jun-2019	B	Plastic Tub 500g
864348		WS03		07-Jun-2019	B	Plastic Tub 500g
864349		WS03		07-Jun-2019	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Report Information

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I/S	Insufficient Sample
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None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix C

Groundwater Monitoring Data

Date	Borehole	Water level (mbgl)	Depth to base (mbgl)	Water level after development (m)	Conductivity (ms)	(ppt)	(pH)	(°c)
02/07/2019 Wells dipped during fieldwork	BH301 (50mm)	0.72	14.22	-	-	-	-	-
	BH301 (19mm)	0.74	4.46	-	-	-	-	-
08/07/2019 Wells dipped during fieldwork	BH301 (50mm)	1.10	14.24	-	-	-	-	-
	BH301 (19mm)	0.70	5.42	-	-	-	-	-
15/07/2019 Wells dipped during fieldwork	BH301 (50mm)	1.10	14.25	-	-	-	-	-
	BH301 (19mm)	0.78	4.42	-	-	-	-	-
07/08/2019 Wells gas monitored then Developed	BH301 (50mm)	0.78	14.22	9.82	0.22	0.11	8.67	12.6
					0.31	0.16	7.83	11.8
					0.31	0.16	7.95	12.0
					0.31	0.15	7.91	12.7
	BH301 (19mm)	0.68	4.03	4.03	0.24	0.13	7.02	13.2
	BH302	4.02	8.06	5.90	0.86	0.43	7.25	14.1
					0.93	0.46	7.37	13.7
					0.92	0.46	7.14	14.1
	BH303	1.96	3.80	3.62	0.96	0.48	6.71	14.6
					0.88	0.44	6.63	14.0
	BH304	5.69	12.65	6.36	0.98	0.49	7.00	11.5
					0.96	0.48	7.07	11.1
					0.98	0.49	7.09	11.1
					0.96	0.48	7.01	11.0
	BH305	2.43	5.10	4.82	0.66	0.33	6.74	12.8
					0.67	0.33	6.67	13.3
	BH306	9.66	10.93	11.03	0.78	0.40	6.99	12.3
					0.74	0.37	7.22	13.3
08/08/2019 Wells Purged and Sampled	BH301 (50mm)	0.94	14.65	1.77	0.32	0.17	5.93	16.7
					0.29	0.15	6.25	15.7
					0.30	0.15	6.56	15.4
					0.30	0.15	6.57	15.3
					0.29	0.15	6.56	15.3
	BH301 (19mm)	1.47	4.23	4.23	-	-	-	-
	BH302	4.47	8.06	4.71	0.96	0.48	7.28	15.3
					0.96	0.48	7.23	14.3
					0.97	0.49	7.29	14.9
					0.97	0.49	7.29	14.9
	BH303	2.04	3.80	1.95	0.84	0.42	7.23	18.7
					0.82	0.41	7.07	17.7
					0.90	0.46	6.22	16.5
	BH304	3.33	12.65	5.45	0.97	0.49	6.87	13.4
					0.97	0.49	6.87	13.3
					0.97	0.48	6.81	12.7
	BH305	2.50	5.30	2.61	0.61	0.31	6.20	16.5
					0.62	0.31	6.21	15.5
					0.62	0.31	6.24	14.6
	BH306	9.59	10.95	9.95	0.76	0.37	6.97	13.3

Date	Borehole	Water level (mbgl)	Depth to base (mbgl)	Water level after development (m)	Conductivity (ms)	(ppt)	(pH)	(°c)
13/08/2019 Wells Purged and Sampled Tip only	BH302	4.47	8.06	4.71	1.04	0.51	7.44	11.9
					0.99	0.50	7.20	10.8
					0.99	0.52	7.19	10.9
					1.00	0.49	7.17	11.0
					0.99	0.50	7.19	10.8
					0.99	0.50	7.18	10.8
	BH303	1.46	3.85	1.35	1.09	0.55	7.15	14.0
					1.04	0.52	7.14	14.1
					0.93	0.46	7.12	14.1
					0.93	0.45	7.04	14.0
					0.92	0.45	7.04	13.9
					0.92	0.46	7.07	14.0
	BH304	6.11	12.60	6.98	1.14	0.56	7.26	11.6
					1.05	0.52	7.21	11.2
					1.03	0.51	7.29	11.0
					1.02	0.51	7.25	11.1
					1.03	0.51	7.26	11.1
	BH305	2.25	5.27	2.35	0.65	0.32	6.62	14.2
					0.64	0.32	6.72	13.5
					0.64	0.32	6.68	13.2
					0.64	0.31	6.70	13.0
					0.64	0.32	6.68	13.1
	BH306	10.03	10.95	10.03	0.75	0.57	6.94	12.6
					0.71	0.35	7.02	11.6
					0.70	0.35	6.98	12.2
					0.70	0.35	6.99	12.0
					0.70	0.35	7.02	12.0
22/08/2019 Wells dipped during gas monitoring	BH301 (50mm)	0.80	14.70	-	-	-	-	-
	BH301 (19mm)	0.88	2.39	-	-	-	-	-
	BH302	2.33	7.92	-	-	-	-	-
	BH303	1.53	3.97	-	-	-	-	-
	BH304	6.22	12.94	-	-	-	-	-
	BH305	2.22	5.24	-	-	-	-	-
	BH306	9.68	11.04	-	-	-	-	-

Date	Borehole	Water level (mbgl)	Depth to base (mbgl)	Water level after development (m)	Conductivity (ms)	(ppt)	(pH)	(°c)
28/08/2019 Wells Purged and Sampled	BH301 (50mm)	0.80	14.70	1.70	0.30	0.17	6.51	15.8
					0.29	0.16	6.53	15.8
					0.31	0.15	6.51	15.6
	BH301 (19mm)	0.90	2.40	2.40	0.25	0.13	6.81	15.7
	BH302	2.48	8.03	4.68	0.96	0.48	7.26	15.1
					0.97	0.48	7.26	14.8
					0.97	0.48	7.27	14.9
	BH303	2.04	3.80	1.95	0.91	0.47	7.14	15.8
					0.87	0.44	7.11	15.7
					0.92	0.44	7.08	15.4
	BH304	5.90	12.64	5.87	0.97	0.49	6.86	12.9
					0.97	0.49	6.85	12.9
					0.98	0.51	6.85	12.7
	BH305	2.42	5.28	2.70	0.6	0.32	6.21	14.8
					0.61	0.31	6.24	14.5
					0.61	0.32	6.26	14.4
	BH306	9.61	10.98	9.95	0.76	0.36	7.02	12.7
12/09/2019 Wells dipped during gas monitoring	BH301 (50mm)	0.80	14.66	-	-	-	-	-
	BH301 (19mm)	0.77	3.06	-	-	-	-	-
	BH302	2.67	7.73	-	-	-	-	-
	BH303	1.70	3.36	-	-	-	-	-
	BH304	4.73	13.19	-	-	-	-	-
	BH305	1.67	4.98	-	-	-	-	-
	BH306	9.68	10.96	-	-	-	-	-

Appendix D

Certificate of Analysis - Groundwater

Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	19-27172-1
Initial Date of Issue:	19-Aug-2019
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Colin Crompton Contaminated Land
Project	LKC 19 1015 Junction 19, Heywood

Quotation No.:		**Date Received:**	09-Aug-2019
Order No.:	736981	**Date Instructed:**	13-Aug-2019
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	19-Aug-2019
Date Approved:	19-Aug-2019		

Approved By:



Details: Glynn Harvey, Laboratory Manager

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-27172	19-27172	19-27172	19-27172	19-27172
Quotation No.:		**Chemtest Sample ID.:**			872706	872707	872708	872709	872710
		Client Sample ID.:			BH301 (50mm)	BH302	BH303	BH304	BH305
		Sample Type:			WATER	WATER	WATER	WATER	WATER
		Date Sampled:			08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
pH	U	1010		N/A	8.3	8.1	8.0	7.5	7.9
Electrical Conductivity	U	1020	µS/cm	1.0		1400		1400	900
Chloride	U	1220	mg/l	1.0		49		46	19
Ammoniacal Nitrogen	U	1220	mg/l	0.050		5.7		3.0	1.2
Nitrate	U	1220	mg/l	0.50		< 0.50		< 0.50	< 0.50
Sulphur	N	1220	mg/l	1.0		140		150	67
Sulphate	U	1220	mg/l	1.0	54	420	480	440	200
Cyanide (Total)	U	1300	mg/l	0.050		< 0.050		< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050		< 0.050		< 0.050	< 0.050
Sulphide	U	1325	mg/l	0.050		[B] < 0.050		[B] < 0.050	[B] < 0.050
Calcium	U	1415	mg/l	5.0		280		230	130
Sodium	U	1415	mg/l	0.50		27		46	33
Total Hardness as CaCO3	U	1270	mg/l	15		750		660	370
Arsenic (Dissolved)	U	1450	µg/l	1.0		4.3		5.3	< 1.0
Boron (Dissolved)	U	1450	µg/l	20		130		180	55
Barium (Dissolved)	U	1450	µg/l	5.0		68		100	78
Beryllium (Dissolved)	U	1450	µg/l	1.0		< 1.0		< 1.0	< 1.0
Cadmium (Dissolved)	U	1450	µg/l	0.080		< 0.080		< 0.080	0.22
Chromium (Dissolved)	U	1450	µg/l	1.0		< 1.0		< 1.0	< 1.0
Copper (Dissolved)	U	1450	µg/l	1.0		< 1.0		< 1.0	4.8
Mercury (Dissolved)	U	1450	µg/l	0.50		< 0.50		< 0.50	< 0.50
Nickel (Dissolved)	U	1450	µg/l	1.0		47		7.0	9.0
Lead (Dissolved)	U	1450	µg/l	1.0		< 1.0		< 1.0	< 1.0
Selenium (Dissolved)	U	1450	µg/l	1.0		2.0		1.9	< 1.0
Vanadium (Dissolved)	U	1450	µg/l	1.0		< 1.0		< 1.0	< 1.0
Zinc (Dissolved)	U	1450	µg/l	1.0		6.7		7.2	4.9
Chromium (Hexavalent)	U	1490	µg/l	20		< 20		< 20	< 20
Aliphatic TPH >C5-C6	N	1675	µg/l	0.010		< 0.010		< 0.010	< 0.010
Aliphatic TPH >C6-C8	N	1675	µg/l	0.010		< 0.010		< 0.010	< 0.010
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	1.0		< 1.0		< 1.0	< 1.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.010		< 0.010		< 0.010	< 0.010
Aromatic TPH >C7-C8	N	1675	µg/l	0.010		< 0.010		< 0.010	< 0.010
Aromatic TPH >C8-C10	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-27172	19-27172	19-27172	19-27172	19-27172
Quotation No.:		**Chemtest Sample ID.:**			872706	872707	872708	872709	872710
		Client Sample ID.:			BH301 (50mm)	BH302	BH303	BH304	BH305
		Sample Type:			WATER	WATER	WATER	WATER	WATER
		Date Sampled:			08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C12-C16	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10		< 0.10		< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	1.0		< 1.0		< 1.0	< 1.0
Total Petroleum Hydrocarbons	N	1675	µg/l	2.0		< 2.0		< 2.0	< 2.0
Dichlorodifluoromethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0		< 2.0		< 2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20		< 0.20		< 0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Dichloromethane	N	1760	µg/l	100		< 100		< 100	< 100
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50		< 0.50		< 0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Benzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20		< 0.20		< 0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50		< 0.50		< 0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0		< 1.0		< 1.0	< 1.0
Toluene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0		< 1.0		< 1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1		< 0.1		< 0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20		< 0.20		< 0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0		< 1.0		< 1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50		< 0.50		< 0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20		< 0.20		< 0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-27172	19-27172	19-27172	19-27172	19-27172
Quotation No.:		**Chemtest Sample ID.:**			872706	872707	872708	872709	872710
		Client Sample ID.:			BH301 (50mm)	BH302	BH303	BH304	BH305
		Sample Type:			WATER	WATER	WATER	WATER	WATER
		Date Sampled:			08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
o-Xylene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Styrene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0		< 1.0		< 1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5.0		< 5.0		< 5.0	< 5.0
N-Propylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5.0		< 5.0		< 5.0	< 5.0
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20		< 0.20		< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10		< 0.10		< 0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-27172	19-27172	19-27172	19-27172	19-27172
Quotation No.:		**Chemtest Sample ID.:**			872706	872707	872708	872709	872710
		Client Sample ID.:			BH301 (50mm)	BH302	BH303	BH304	BH305
		Sample Type:			WATER	WATER	WATER	WATER	WATER
		Date Sampled:			08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
2,4-Dichlorophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50		20		< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50		25		< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50		23		< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50		13		< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50		26		< 0.50	< 0.50

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-27172	19-27172	19-27172	19-27172	19-27172
Quotation No.:		**Chemtest Sample ID.:**			872706	872707	872708	872709	872710
		Client Sample ID.:			BH301 (50mm)	BH302	BH303	BH304	BH305
		Sample Type:			WATER	WATER	WATER	WATER	WATER
		Date Sampled:			08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019	08-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Benzo[k]fluoranthene	N	1790	µg/l	0.50		14		< 0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50		15		< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50		5.8		< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50		2.9		< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50		26		< 0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50		< 0.50		< 0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Fluorene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Anthracene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Pyrene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Chrysene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010		< 0.010		< 0.010	< 0.010
Total Of 6 PAH's	N	1800	µg/l	0.10		< 0.10		< 0.10	< 0.10
Total Phenols	U	1920	mg/l	0.030		< 0.030		< 0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
872707		BH302		08-Aug-2019	BD	Coloured Winchester 1000ml (Broken)
872707		BH302		08-Aug-2019	BD	EPA Vial 40ml
872707		BH302		08-Aug-2019	BD	Plastic Bottle 1000ml
872709		BH304		08-Aug-2019	B	Coloured Winchester 1000ml
872709		BH304		08-Aug-2019	B	EPA Vial 40ml
872709		BH304		08-Aug-2019	B	Plastic Bottle 1000ml
872710		BH305		08-Aug-2019	B	Coloured Winchester 1000ml
872710		BH305		08-Aug-2019	B	EPA Vial 40ml
872710		BH305		08-Aug-2019	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

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Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

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2183

Final Report

Report No.:	19-29048-1
Initial Date of Issue:	09-Sep-2019
Client	LK Consult
Client Address:	Unit 29 Eton Business Park Eton Hill Road Radcliffe Manchester Lancashire M26 2ZS
Contact(s):	Colin Crompton Contaminated Land
Project	LKC 19 1015 Junction 19, Heywood

Quotation No.:		**Date Received:**	29-Aug-2019
Order No.:	736981	**Date Instructed:**	03-Sep-2019
No. of Samples:	6		
Turnaround (Wkdays):	5	**Results Due:**	09-Sep-2019
Date Approved:	09-Sep-2019		

Approved By:



Details: Amy Parekh-Pross, Technical Projects Manager

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-29048	19-29048	19-29048	19-29048	19-29048	19-29048
Quotation No.:		**Chemtest Sample ID.:**			880510	880512	880513	880514	880515	880516
		Client Sample ID.:			BH301/50mm	BH302	BH303	BH304	BH305	BH306
		Sample Type:			WATER	WATER	WATER	WATER	WATER	WATER
		Date Sampled ($):			28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
pH	U	1010		N/A	8.2	8.1	8.1	8.1	8.1	8.0
Electrical Conductivity	U	1020	µS/cm	1.0	490		1200			1200
Chloride	U	1220	mg/l	1.0	32		29			140
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.93		1.5			0.86
Nitrate	U	1220	mg/l	0.50	< 0.50		< 0.50			0.76
Sulphur	N	1220	mg/l	1.0	18		160			120
Sulphate	U	1220	mg/l	1.0	55	250	470	320	120	350
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		< 0.050			< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		< 0.050			< 0.050
Sulphide	U	1325	mg/l	0.050	[B] < 0.050		[B] < 0.050			[B] < 0.050
Calcium	U	1415	mg/l	5.0	66		230			170
Sodium	U	1415	mg/l	0.50	7.4		31			72
Total Hardness as CaCO3	U	1270	mg/l	15	180		630			530
Arsenic (Dissolved)	U	1450	µg/l	1.0	1.6		1.3			1.8
Boron (Dissolved)	U	1450	µg/l	20	660		620			870
Barium (Dissolved)	U	1450	µg/l	5.0	260		70			230
Beryllium (Dissolved)	U	1450	µg/l	1.0	< 1.0		< 1.0			< 1.0
Cadmium (Dissolved)	U	1450	µg/l	0.080	< 0.080		< 0.080			0.25
Chromium (Dissolved)	U	1450	µg/l	1.0	< 1.0		< 1.0			< 1.0
Copper (Dissolved)	U	1450	µg/l	1.0	< 1.0		< 1.0			15
Mercury (Dissolved)	U	1450	µg/l	0.50	< 0.50		< 0.50			< 0.50
Nickel (Dissolved)	U	1450	µg/l	1.0	1.7		3.3			13
Lead (Dissolved)	U	1450	µg/l	1.0	< 1.0		< 1.0			< 1.0
Selenium (Dissolved)	U	1450	µg/l	1.0	1.5		1.4			10
Vanadium (Dissolved)	U	1450	µg/l	1.0	< 1.0		< 1.0			< 1.0
Zinc (Dissolved)	U	1450	µg/l	1.0	4.0		10			15
Chromium (Hexavalent)	U	1490	µg/l	20	< 20		< 20			< 20
Aliphatic TPH >C5-C6	N	1675	µg/l	0.010	< 0.010		< 0.010			< 0.010
Aliphatic TPH >C6-C8	N	1675	µg/l	0.010	< 0.010		< 0.010			< 0.010
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	1.0	< 1.0		< 1.0			< 1.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.010	< 0.010		< 0.010			< 0.010
Aromatic TPH >C7-C8	N	1675	µg/l	0.010	< 0.010		< 0.010			< 0.010
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-29048	19-29048	19-29048	19-29048	19-29048	19-29048
Quotation No.:		**Chemtest Sample ID.:**			880510	880512	880513	880514	880515	880516
		Client Sample ID.:			BH301/50mm	BH302	BH303	BH304	BH305	BH306
		Sample Type:			WATER	WATER	WATER	WATER	WATER	WATER
		Date Sampled ($):			28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10		< 0.10			< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	1.0	< 1.0		< 1.0			< 1.0
Total Petroleum Hydrocarbons	N	1675	µg/l	2.0	< 2.0		< 2.0			< 2.0
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10		< 0.10			0.16
Chloromethane	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10		< 0.10			0.24
Bromomethane	N	1760	µg/l	2.0	< 2.0		< 2.0			< 2.0
Chloroethane	N	1760	µg/l	0.20	0.65		0.64			< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
Dichloromethane	N	1760	µg/l	100	< 100		< 100			< 100
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	0.23		0.16			< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	0.22		0.13			0.17
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10		< 0.10			0.12
Bromochloromethane	N	1760	µg/l	0.50	< 0.50		< 0.50			< 0.50
Trichloromethane	N	1760	µg/l	0.10	0.27		< 0.10			0.31
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10		< 0.10			0.16
Tetrachloromethane	N	1760	µg/l	0.10	0.12		< 0.10			< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	0.25		< 0.10			< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10		0.10			< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20		0.49			< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10		< 0.10			0.11
1,2-Dichloropropane	N	1760	µg/l	0.10	0.24		< 0.10			0.36
Dibromomethane	N	1760	µg/l	0.10	0.34		0.64			0.37
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50		< 0.50			< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0		< 1.0			< 1.0
Toluene	N	1760	µg/l	0.10	0.32		0.27			0.28
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0		< 1.0			< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1		< 0.1			< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	0.27		< 0.20			0.23
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0		< 1.0			< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50		< 0.50			< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20		0.44			< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
o-Xylene	N	1760	µg/l	0.10	0.12		< 0.10			0.23
Styrene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10

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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult					**Chemtest Job No.:**	19-29048	19-29048	19-29048	19-29048	19-29048
Quotation No.:					**Chemtest Sample ID.:**	880510	880512	880513	880514	880515	880516
					Client Sample ID.:	BH301/50mm	BH302	BH303	BH304	BH305	BH306
					Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER
					Date Sampled ($):	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Tribromomethane	N	1760	µg/l	1.0	< 1.0		< 1.0			< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
Bromobenzene	N	1760	µg/l	0.10	0.19		< 0.10			0.17
1,2,3-Trichloropropane	N	1760	µg/l	5.0	< 5.0		< 5.0			< 5.0
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	0.12		< 0.10			< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10		0.14			< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	0.24		0.10			< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10		0.12			0.11
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	0.21		< 0.10			< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	0.11		< 0.10			< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10		0.14			< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10		< 0.10			0.15
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5.0	< 5.0		< 5.0			< 5.0
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	0.16		0.11			< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	0.15		< 0.10			< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20		< 0.20			< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10		0.10			0.34
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50

Chemtest
The right chemistry to deliver results

Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-29048	19-29048	19-29048	19-29048	19-29048	19-29048
Quotation No.:		**Chemtest Sample ID.:**			880510	880512	880513	880514	880515	880516
		Client Sample ID.:			BH301/50mm	BH302	BH303	BH304	BH305	BH306
		Sample Type:			WATER	WATER	WATER	WATER	WATER	WATER
		Date Sampled ($):			28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50

Chemtest
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Results - Water

Project: LKC 19 1015 Junction 19, Heywood

Client: LK Consult		**Chemtest Job No.:**			19-29048	19-29048	19-29048	19-29048	19-29048	19-29048
Quotation No.:		**Chemtest Sample ID.:**			880510	880512	880513	880514	880515	880516
		Client Sample ID.:			BH301/50mm	BH302	BH303	BH304	BH305	BH306
		Sample Type:			WATER	WATER	WATER	WATER	WATER	WATER
		Date Sampled ($):			28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50		< 0.50			< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010		< 0.010			< 0.010
Total Of 6 PAH's	N	1800	µg/l	0.10	< 0.10		< 0.10			< 0.10
Total Phenols	U	1920	mg/l	0.030	< 0.030		< 0.030			< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
880510		BH301/50mm		28-Aug-2019	B	Coloured Winchester 1000ml
880510		BH301/50mm		28-Aug-2019	B	EPA Vial 40ml
880510		BH301/50mm		28-Aug-2019	B	Plastic Bottle 1000ml
880513		BH303		28-Aug-2019	B	Coloured Winchester 1000ml
880513		BH303		28-Aug-2019	B	EPA Vial 40ml
880513		BH303		28-Aug-2019	B	Plastic Bottle 1000ml
880516		BH306		28-Aug-2019	B	Coloured Winchester 1000ml
880516		BH306		28-Aug-2019	B	EPA Vial 40ml
880516		BH306		28-Aug-2019	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
$	This information has been supplied by the client and can affect the integrity of test data.

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix E

Gas Monitoring Results

LK CONSULT LTD

GAS MONITORING RECORD

SITE	Heywood
REF	LKC 19 1015b
DATE	7-Aug-2019
STAFF	BR
VISIT	1 of 3

EQUIPMENT*1		
Instrument / Model Type	Serial Number	Comments
Geotechnical Instruments GA2000+	GA10350	Serviced, calibrated & gas checked.
Geotech Dipmeter	81070	Operating Normally

ATMOSPHERIC / GROUND CONDITIONS	
Atmospheric Pressure Trend on Site	Variable
Atmospheric Pressure (Prev 24hrs)	Falling
Weather Conditions	Raining, cloudy, strong wind.
Ground Conditions	Wet

Borehole ID	Date/Time	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Peak CH4 (% v/v)	Peak CO2 (% v/v)	% of Lower Explosive Limit*2	CO Pod (ppm)	H2S Pod (ppm)	Balance (%)	Barometric Pressure (mb)	Relative Pressure (mb)	Internal Flow *3 (ltr/hr)	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Notes
BH301 (19mm)	07/08/2019 10:43	0.0	0.0	19.9	0.0	0.0	0.0	0.0	0.0	80.1	988	-0.6	0.0	0.68	4.03	PID = 1.6ppm
BH301 (50mm)	07/08/2019 10:52	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	78.7	988	-0.5	0.0	0.78	12.22	PID = 1.3ppm
BH302	07/08/2019 13:53	2.6	1.7	10.1	2.4	0.0	52.0	0.0	0.0	85.6	988	-0.5	0.0	4.02	8.06	PID = 6.0ppm
BH303	07/08/2019 13:02	0.0	2.3	16.6	0.0	0.0	0.0	0.0	0.0	81.1	989	-0.6	0.0	1.96	3.80	PID = 4.3ppm
BH304	07/08/2019 13:44	8.1	0.5	9.1	8.5	0.0	>>>>	0.0	0.0	82.3	988	-0.6	0.0	5.69	12.65	PID = 0.6ppm
BH305	07/08/2019 13:15	0.0	7.9	13.6	0.0	0.0	0.0	0.0	0.0	78.5	989	-0.5	0.0	2.43	5.10	PID = 22.1ppm
BH306	07/08/2019 14:08	0.7	3.4	7.8	0.7	0.0	14.0	0.0	0.0	88.1	988	-0.5	0.0	9.66	10.93	PID = 4.1ppm

ABBREVIATIONS

*1	Refer to Note 1
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
% v/v	Percentage volume by total volume
ppm	Parts per million
mb	Millibars
ltr/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air
OEL	Occupational exposure limit

NOTES

1. Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records. and service certificates.
2. CH4 is explosive between the range of 5 - 15% v/v. 100% lower explosive limit is equal to 5% v/v CH4.
3. Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr)
4. After CIRIA C665. GSV = gas concentration (%) x flow rate. Peak CH4 and Steady CO2 values used.
5. Monitoring is carried out in line with procedures set by LKC Ltd with reference to CIRIA C665. Refer to procedural documents

LK CONSULT LTD

GAS MONITORING RECORD

SITE	Heywood
REF	LKC 19 1015
DATE	22-Aug-2019
STAFF	PW
VISIT	2 of 3

EQUIPMENT*1		
Instrument / Model Type	Serial Number	Comments
Geotechnical Instruments GA2000+	GA10350	Serviced, calibrated & gas checked.
Geotech Dipmeter	81454-14	Operating Normally

ATMOSPHERIC / GROUND CONDITIONS	
Atmospheric Pressure Trend on Site	Steady
Atmospheric Pressure (Prev 24hrs)	Falling
Weather Conditions	Heavy rain, cloudy, strong wind.
Ground Conditions	Wet

Borehole ID	Date/Time	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Peak CH4 (% v/v)	Peak CO2 (% v/v)	% of Lower Explosive Limit*2	CO Pod (ppm)	H2S Pod (ppm)	Balance (%)	Barometric Pressure (mb)	Relative Pressure (mb)	Internal Flow *3 (ltr/hr)	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Notes
BH301 (19mm)	22/08/2019 11:37	0.0	0.1	20.4	0.0	0.1	0.0	0.0	0.0	79.5	1005	-0.6	0.0	0.88	2.39	PID = 0.3
BH301 (50mm)	22/08/2019 11:44	0.0	0.2	20.2	0.0	0.2	0.0	0.0	0.0	79.6	1005	-0.6	0.0	0.80	14.70	PID = 0.2
BH302	22/08/2019 14:49	7.9	3.4	6.2	7.9	3.4	100.0	0.0	0.0	82.5	1005	-0.5	0.0	2.33	7.92	PID = 1.8
BH303	22/08/2019 14:29	0.0	0.2	20.7	0.0	0.2	0.0	0.0	0.0	79.1	1005	-0.9	0.0	1.53	3.97	PID = 3.1
BH304	22/08/2019 15:10	3.4	0.5	13.4	3.4	0.5	68.0	0.0	0.0	82.7	1005	-0.5	0.0	6.22	12.94	PID = 2.8
BH305	22/08/2019 14:16	2.1	7.7	10.3	2.1	7.7	42.0	0.0	0.0	79.9	1005	-0.8	0.0	2.22	5.24	PID = 1.1
BH306	22/08/2019 15:28	1.8	3.7	8.9	1.8	3.7	36.0	0.0	0.0	85.6	1005	-0.5	0.0	9.68	11.04	PID = 0.0

ABBREVIATIONS

*1	Refer to Note 1
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
% v/v	Percentage volume by total volume
ppm	Parts per million
mb	Millibars
ltr/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air
OEL	Occupational exposure limit

NOTES

1. Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records. and service certificates.
2. CH4 is explosive between the range of 5 - 15% v/v. 100% lower explosive limit is equal to 5% v/v CH4.
3. Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr)
4. After CIRIA C665. GSV = gas concentration (%) x flow rate. Peak CH4 and Steady CO2 values used.
5. Monitoring is carried out in line with procedures set by LKC Ltd with reference to CIRIA C665. Refer to procedural documents

LK CONSULT LTD

GAS MONITORING RECORD

SITE	Heywood
REF	LKC 19 1015b
DATE	12-Sep-2019
STAFF	BR
VISIT	3 of 3

EQUIPMENT*1		
Instrument / Model Type	Serial Number	Comments
Geotechnical Instruments GA5000	G502417	Serviced, calibrated & gas checked.
Geotech Dipmeter	81070	Operating Normally

ATMOSPHERIC / GROUND CONDITIONS	
Atmospheric Pressure Trend on Site	Variable
Atmospheric Pressure (Prev 24hrs)	Variable
Weather Conditions	Cool, cloudy
Ground Conditions	Wet/Boggy

Borehole ID	Date/Time	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Peak CH4 (% v/v)	Peak CO2 (%v/v)	% of Lower Explosive Limit*2	CO Pod (ppm)	H2S Pod (ppm)	Balance (%)	Barometric Pressure (mb)	Internal Flow *3 (ltr/hr)	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Notes
BH301 (50mm)	12/09/2019 09:39	0.1	0.1	20.3	0.1	0.1	2.0	0.0	0.0	79.5	1007	0.0	0.80	14.66	Peak flow = 0, CO peak = 1. Very silty. PID = 1.3ppm
BH301 (19mm)	12/09/2019 09:42	0.1	0.2	20.0	0.2	0.2	2.0	0.0	0.0	79.7	1008	0.2	0.77	3.06	Peak flow = 3.7, peak CO = 0, pump failed at 21 secs. Very silty. PID = 0.9ppm
BH302	12/09/2019 10:38	4.5	3.2	3.1	4.5	3.2	90.0	1.0	0.0	89.2	1007	-0.2	2.67	7.73	Peak flow = -0.3, CO peak 2, PID = 4.8ppm
BH303	12/09/2019 10:49	0.0	2.9	18.7	0.6	3.1	0.0	0.0	0.0	78.4	1008	0.1	1.70	3.36	Peak flow = 0.1, CO peak = 1, PID = 2.0ppm
BH304	12/09/2019 10:31	7.4	0.8	9.7	7.4	0.8	>>>>	2.0	0.0	82.1	1007	-0.3	4.73	13.19	Peak flow = 0.3, CO peak 2, PID = 1.1ppm
BH305	12/09/2019 10:57	0.0	2.6	18.9	0.1	2.6	0.0	0.0	0.0	78.5	1009	0.1	1.67	4.98	Peak flow = 0.1, CO peak = 3, PID = 7.1ppm
BH306	12/09/2019 10:23	0.3	3.1	5.3	0.3	3.1	6.0	1.0	0.0	91.3	1006	-2.8	9.68	10.96	Peak flow = -2.9, CO peak = 1, PID = 3.0ppm

ABBREVIATIONS

*1	Refer to Note 1
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
% v/v	Percentage volume by total volume
ppm	Parts per million
mb	Millibars
ltr/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air
OEL	Occupational exposure limit

NOTES

1. Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records. and service certificates.
2. CH4 is explosive between the range of 5 - 15% v/v. 100% lower explosive limit is equal to 5% v/v CH4.
3. Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr)
4. After CIRIA C665. GSV = gas concentration (%) x flow rate. Peak CH4 and Steady CO2 values used.
5. Monitoring is carried out in line with procedures set by LKC Ltd with reference to CIRIA C665. Refer to procedural documents

Appendix F

Certificate of Analysis - Geotechnical

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 19 1015 -
Junction 19, Heywood

Job Number MRN 3524/93/94
Date of Issue 05 August 2019
Page **1 of 125**

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted. This does not, however, guarantee the balance of the materials from which the tested samples have been taken to be of equal quality.

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

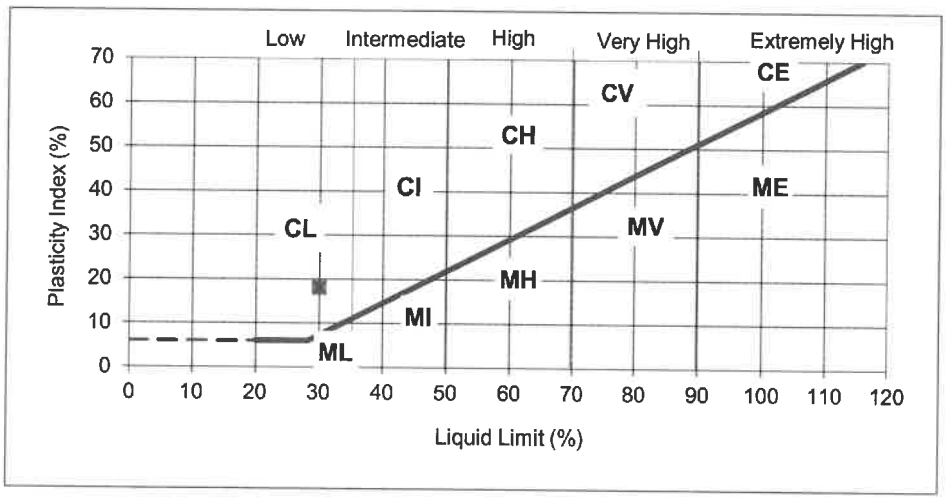
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH301 (D) 0.60m	DATE SAMPLED	Not advised
SAMPLE No.	84458	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Soft brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
27	30	12	18	95



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

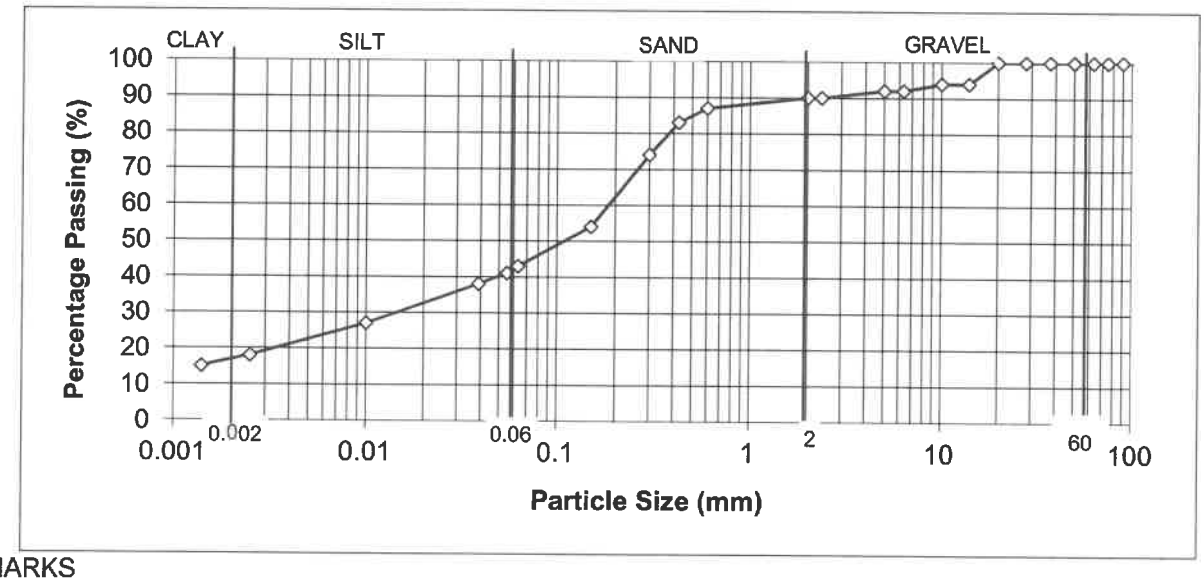
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH301 (B) 2.00-2.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84460	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Soft brown silty very sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	90	
90	100		2	90	
75	100		0.6	87	
63	100		0.425	83	
50	100		0.3	74	
37.5	100		0.15	54	
28	100		0.063	43	
20	100		0.055	41	
14	94		0.039	38	
10	94		0.01	27	
6.3	92		0.0025	18	
5	92		0.0014	15	



REMARKS

As received moisture content = 19%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

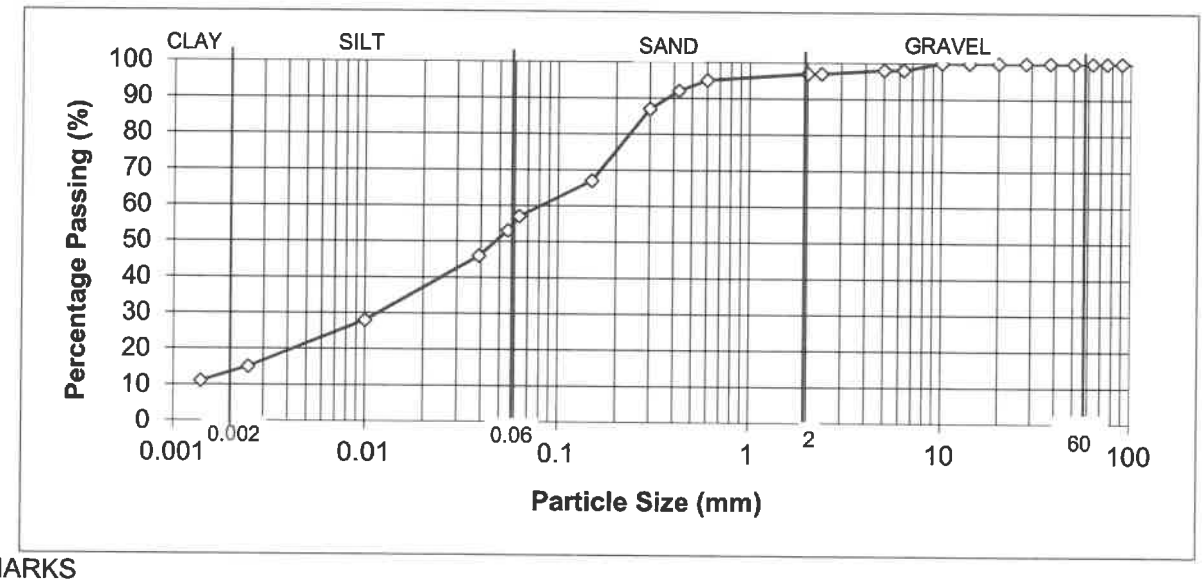
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH301 (B) 3.00-3.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84461	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Firm brown silty very sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	97	
90	100		2	97	
75	100		0.6	95	
63	100		0.425	92	
50	100		0.3	87	
37.5	100		0.15	67	
28	100		0.063	57	
20	100		0.055	53	
14	100		0.039	46	
10	100		0.01	28	
6.3	98		0.0025	15	
5	98		0.0014	11	



REMARKS

As received moisture content = 17%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

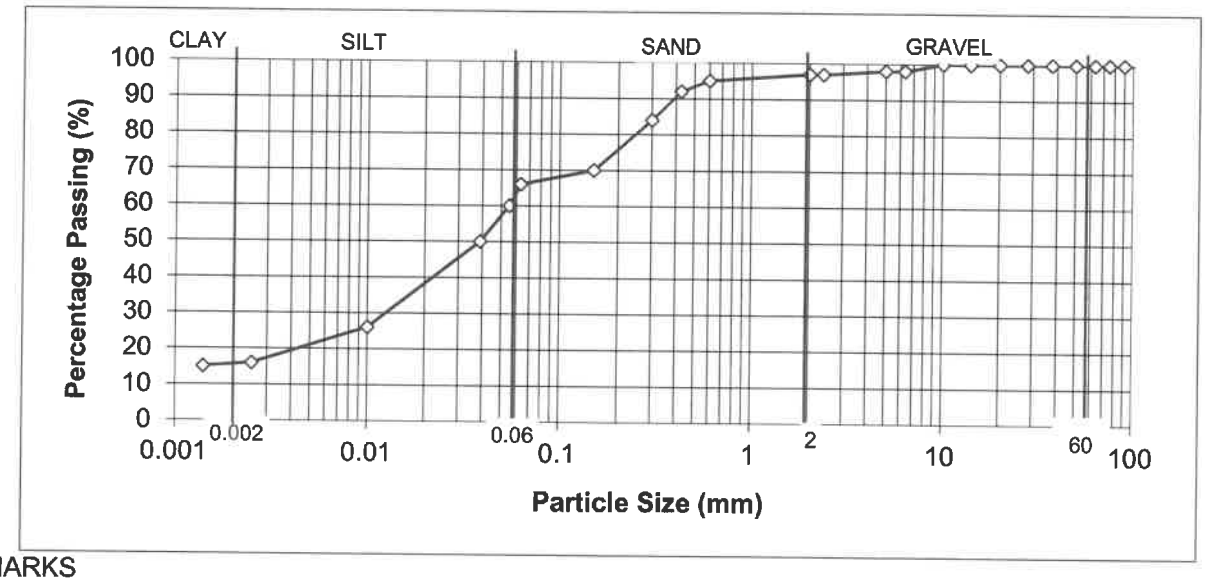
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH301 (B) 6.50-6.95m	DATE SAMPLED	Not advised
LAB SAMPLE No	84463	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	97	
90	100		2	97	
75	100		0.6	95	
63	100		0.425	92	
50	100		0.3	84	
37.5	100		0.15	70	
28	100		0.063	66	
20	100		0.055	60	
14	100		0.039	50	
10	100		0.01	26	
6.3	98		0.0025	16	
5	98		0.0014	15	



REMARKS
As received moisture content = 13%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING
1580

TEST CERTIFICATE

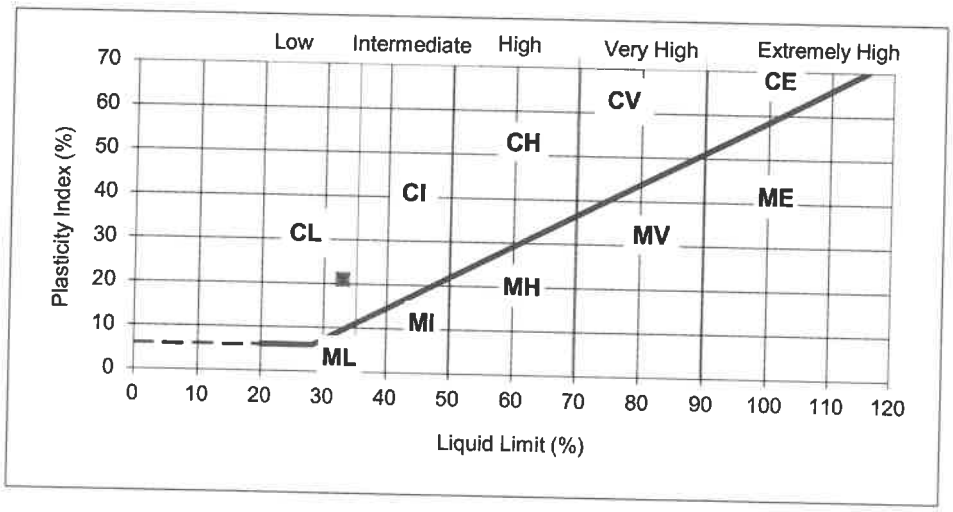
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH301 (D) 7.60m	DATE SAMPLED	Not advised
SAMPLE No.	84464	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
14	33	12	21	94



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

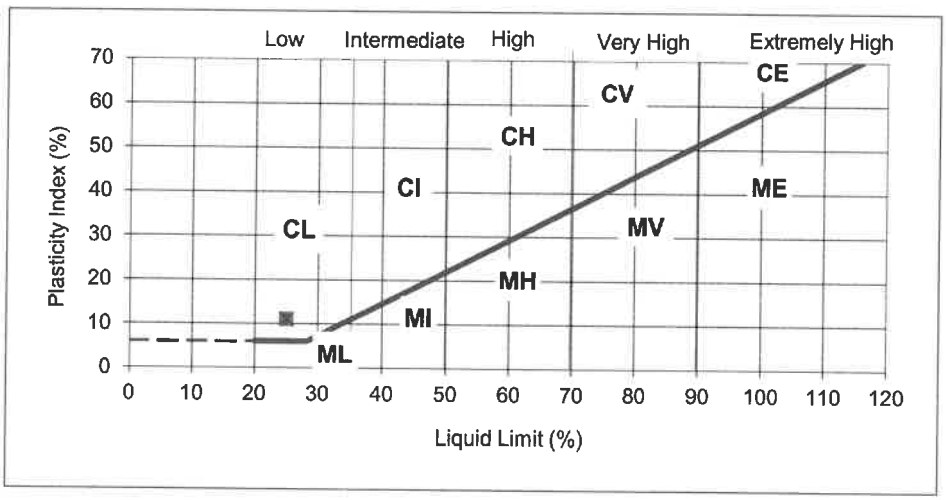
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH301(X) 2-2.45m	DATE SAMPLED	Not advised
SAMPLE No.	84471	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Soft to firm brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17	25	14	11	91



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

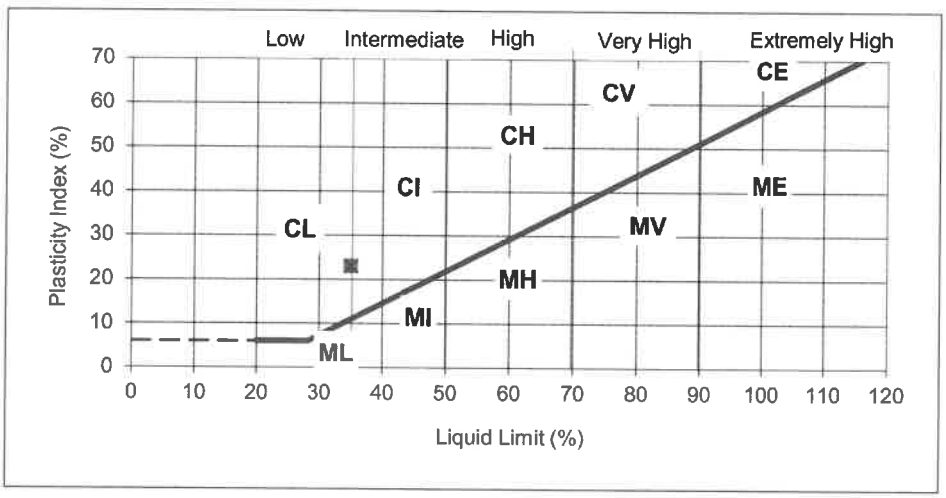
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH301 (X) 3-3.45m	DATE SAMPLED	Not advised
SAMPLE No.	84472	DATE RECEIVED	19-Jul-19
DATE TESTED	24-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
13	35	12	23	95



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

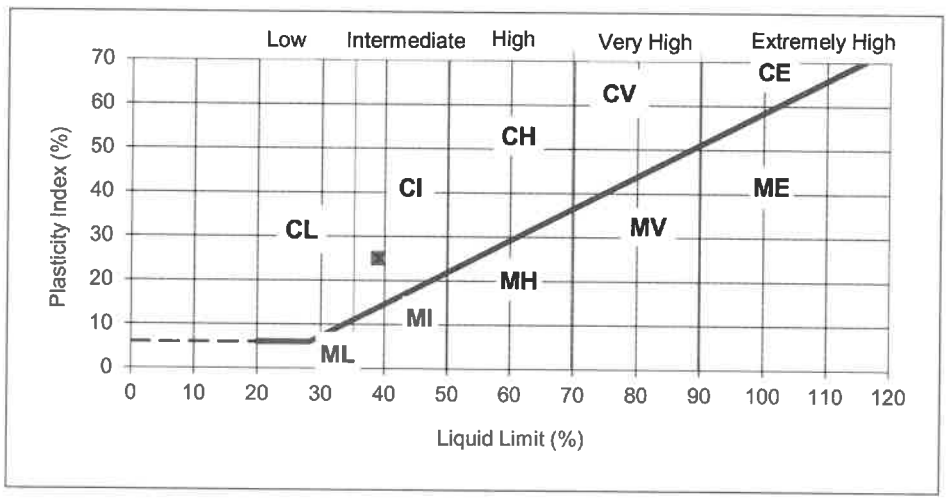
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH301 (X) 6.5-6.95m	DATE SAMPLED	Not advised
SAMPLE No.	84474	DATE RECEIVED	19-Jul-19
DATE TESTED	24-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18	39	14	25	100



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

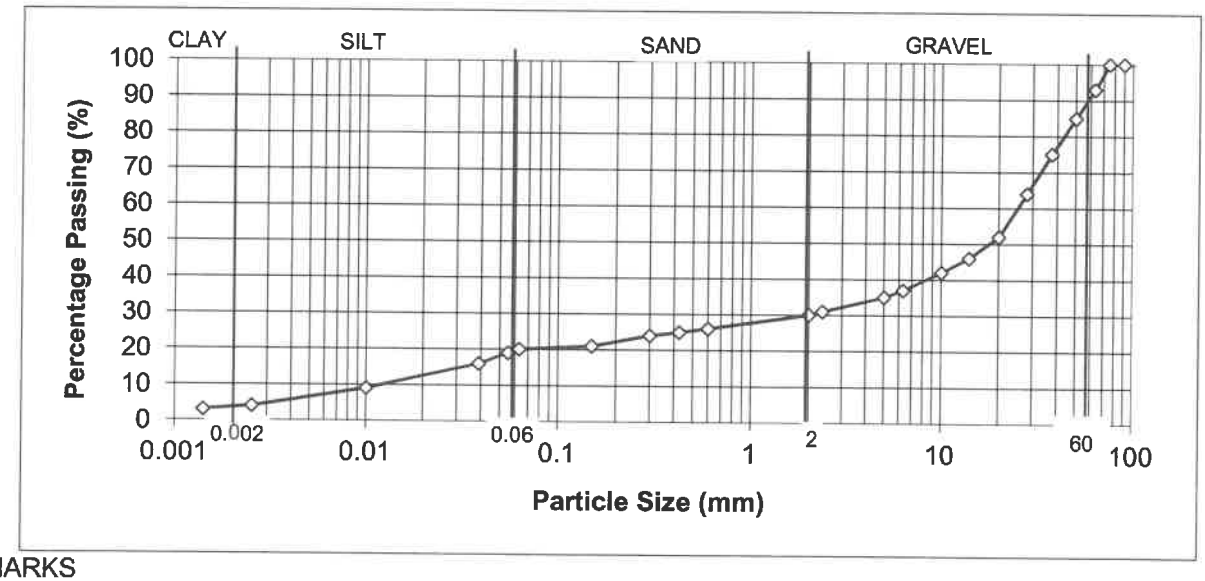
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (B) 0.60-1.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84480	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Brown slightly clayey silty sandy fine to coarse GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	31	
90	100		2	30	
75	100		0.6	26	
63	93		0.425	25	
50	85		0.3	24	
37.5	75		0.15	21	
28	64		0.063	20	
20	52		0.055	19	
14	46		0.039	16	
10	42		0.01	9	
6.3	37		0.0025	4	
5	35		0.0014	3	



REMARKS

As received moisture content = 9.0%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

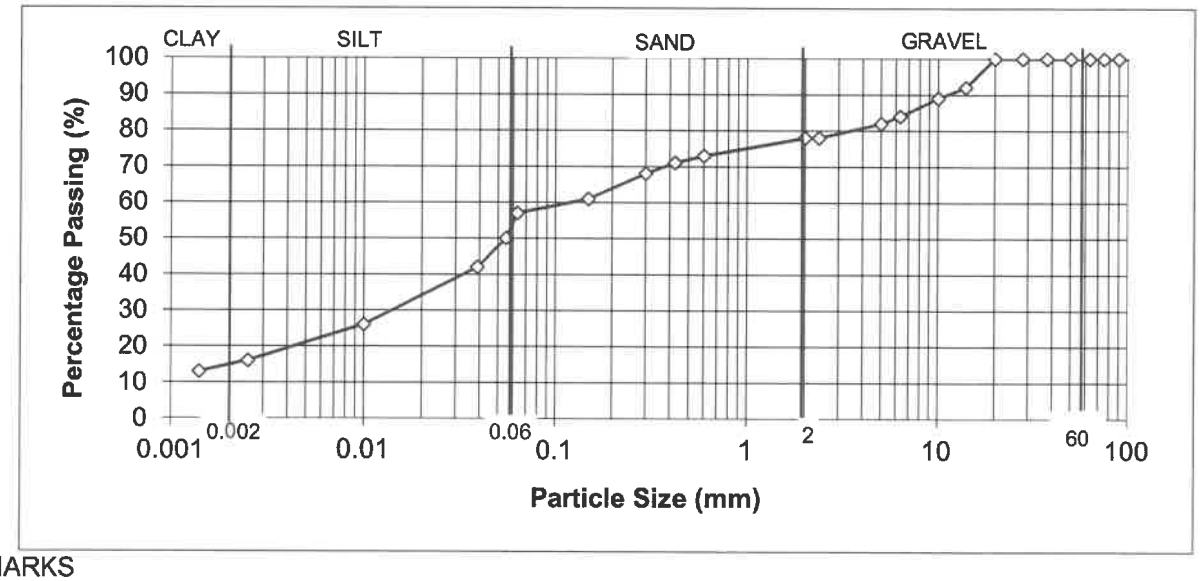
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (B) 2.00-2.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84482	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Soft brown silty sandy CLAY with frequent gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	78	
90	100		2	78	
75	100		0.6	73	
63	100		0.425	71	
50	100		0.3	68	
37.5	100		0.15	61	
28	100		0.063	57	
20	100		0.055	50	
14	92		0.039	42	
10	89		0.01	26	
6.3	84		0.0025	16	
5	82		0.0014	13	



REMARKS

As received moisture content = 28%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

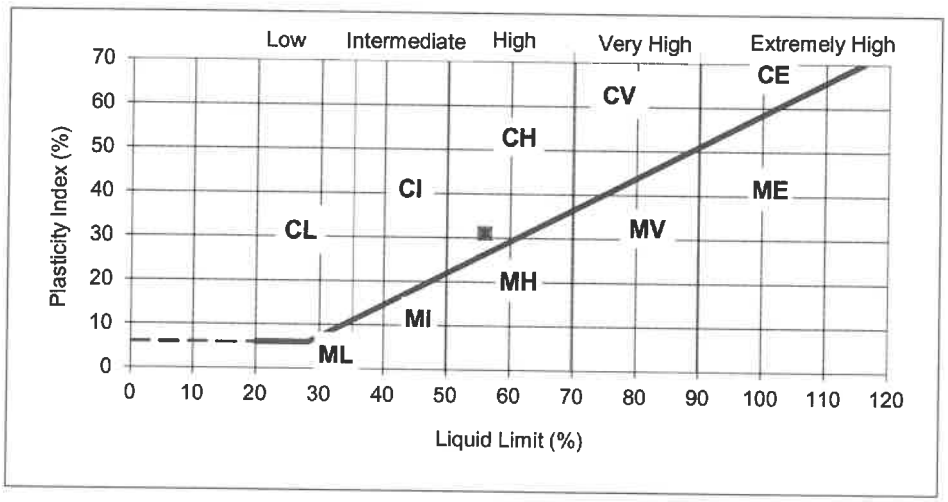
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH302(D)2.0-3.0m	DATE SAMPLED	Not advised
SAMPLE No.	84483	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
35	56	25	31	100



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE, GREG STREET
REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

ORGANIC MATTER CONTENT
(Loss on Ignition)
BS 1377: PART 3: 1990

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 – Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (D) 3.0-4.0m	DATE SAMPLED	Not advised
LAB SAMPLE No	84485	DATE RECEIVED	19 July 2019
DATE TESTED	24 July 2019	SAMPLED BY	Client

MATERIAL	Firm to stiff brown silty sandy CLAY with occasional gravel
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried

% Passing 2mm in sample	81	%
Loss on Ignition material passing 2mm (Avg. of 2)	5.7	%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02 August 2019

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

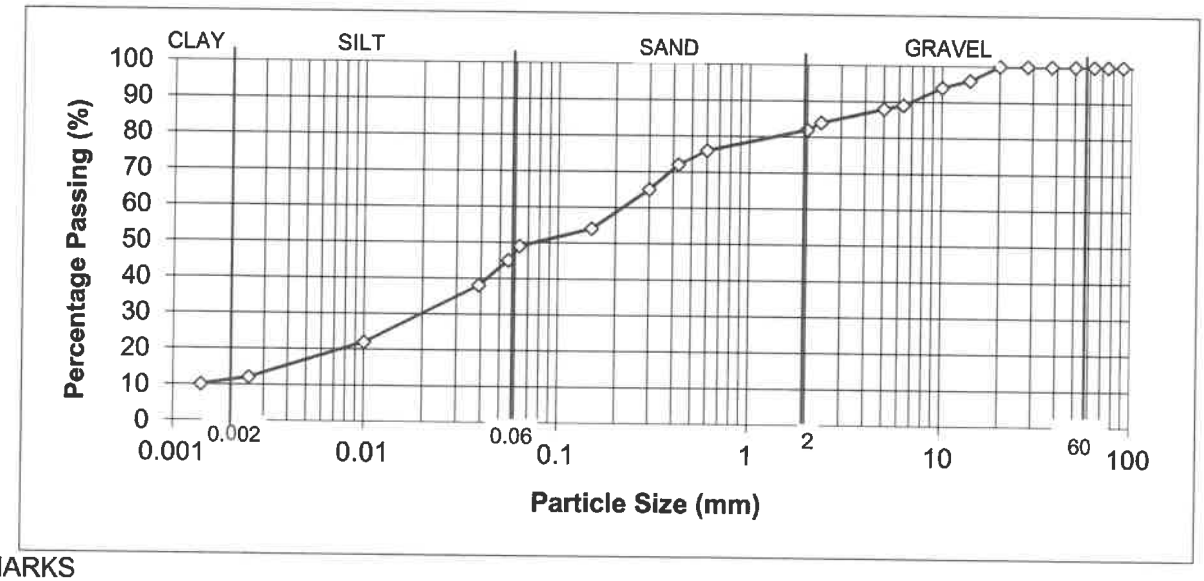
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (B) 4.00-4.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84486	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Soft brown silty sandy CLAY with occasional gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	84	
90	100		2	82	
75	100		0.6	76	
63	100		0.425	72	
50	100		0.3	65	
37.5	100		0.15	54	
28	100		0.063	49	
20	100		0.055	45	
14	96		0.039	38	
10	94		0.01	22	
6.3	89		0.0025	12	
5	88		0.0014	10	



REMARKS

As received moisture content = 25%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

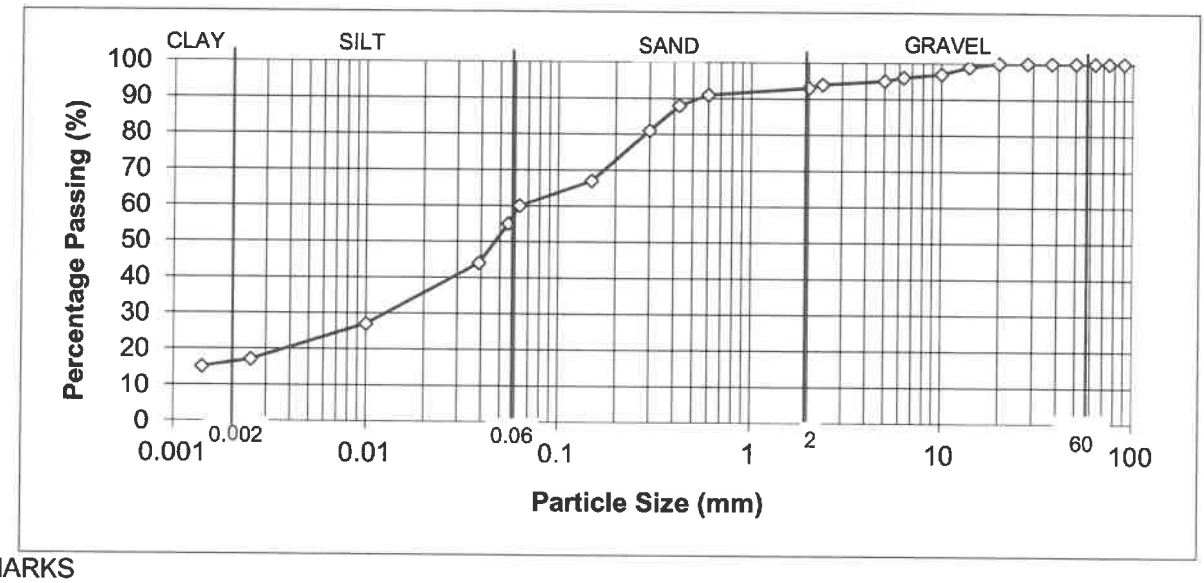
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (B) 5.00-5.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84487	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	94	
90	100		2	93	
75	100		0.6	91	
63	100		0.425	88	
50	100		0.3	81	
37.5	100		0.15	67	
28	100		0.063	60	
20	100		0.055	55	
14	99		0.039	44	
10	97		0.01	27	
6.3	96		0.0025	17	
5	95		0.0014	15	



REMARKS

As received moisture content = 18%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

form omcram

MURRAY RIX

33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

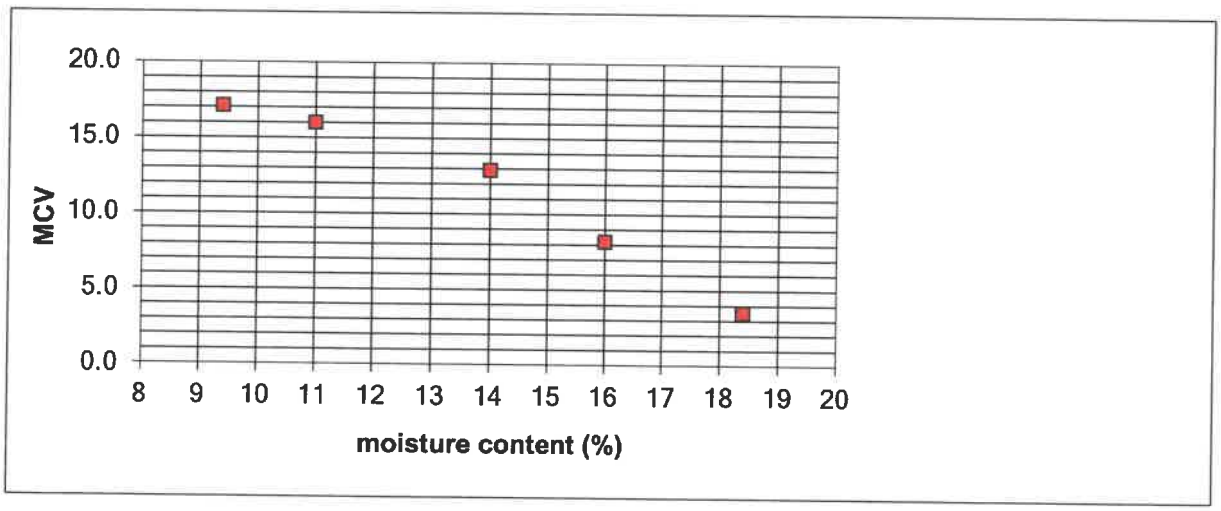
MOISTURE CONDITION VALUE/MOISTURE CONTENT RELATIONSHIP
BS 1377: PART 4: 1990 Clause 5.5

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302(B)5.00-5.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84487	DATE RECEIVED	19-Jul-19
DATE TESTED	29-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample
PROPORTION LARGER THAN 20 mm	0%

Point Number	Moisture Content (%)	MCV
1	9.4	17.1
2	11	16.0
3	14	12.9
4	16	8.2
5	18	3.5



REMARKS/ABNORMALITIES

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)

DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

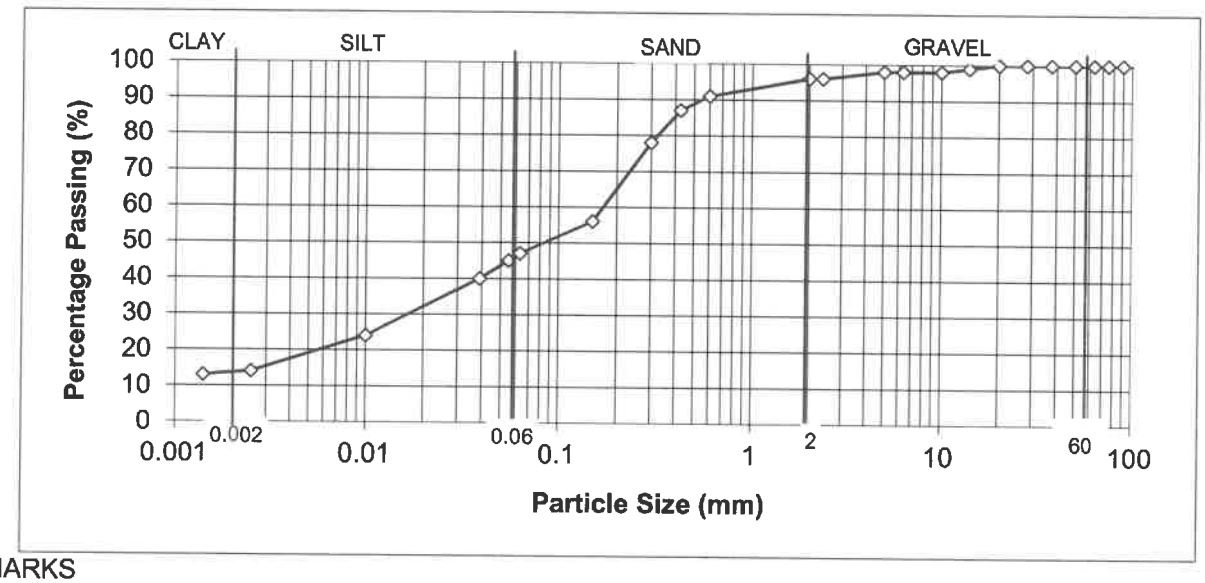
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH302 (B) 8.00-8.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84488	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty very sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	96	
90	100		2	96	
75	100		0.6	91	
63	100		0.425	87	
50	100		0.3	78	
37.5	100		0.15	56	
28	100		0.063	47	
20	100		0.055	45	
14	99		0.039	40	
10	98		0.01	24	
6.3	98		0.0025	14	
5	98		0.0014	13	



REMARKS
As received moisture content = 9.1%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

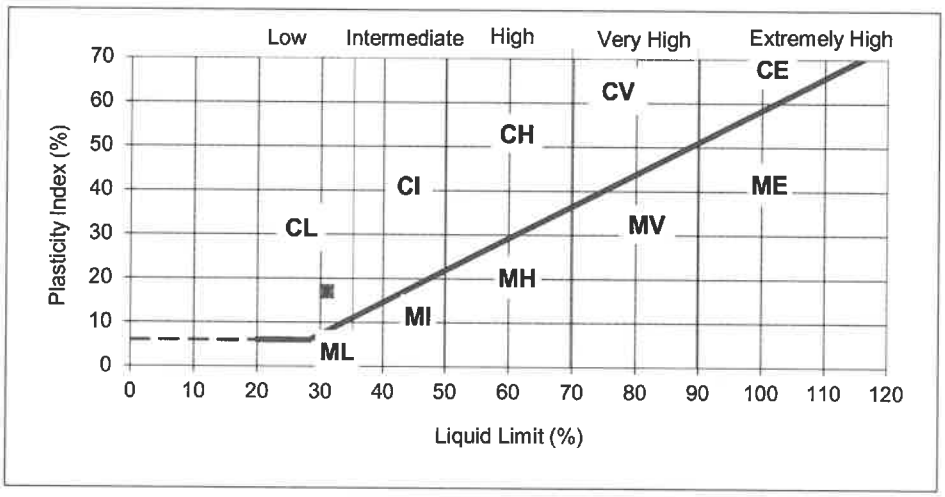
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH302 (X) 4-4.45m	DATE SAMPLED	Not advised
SAMPLE No.	84490	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff grey brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19	31	14	17	92



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

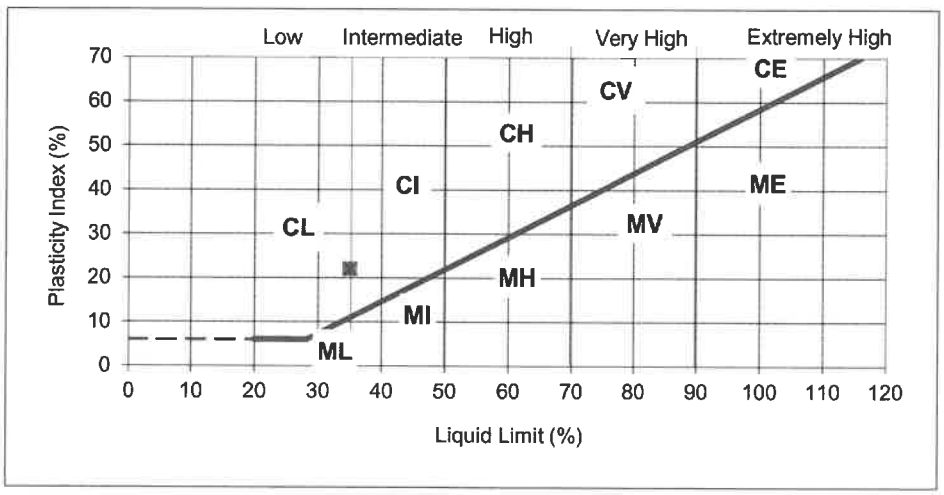
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH302(X) 5-5.45m	DATE SAMPLED	Not advised
SAMPLE No.	84491	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16	35	13	22	96



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING
1580

TEST CERTIFICATE

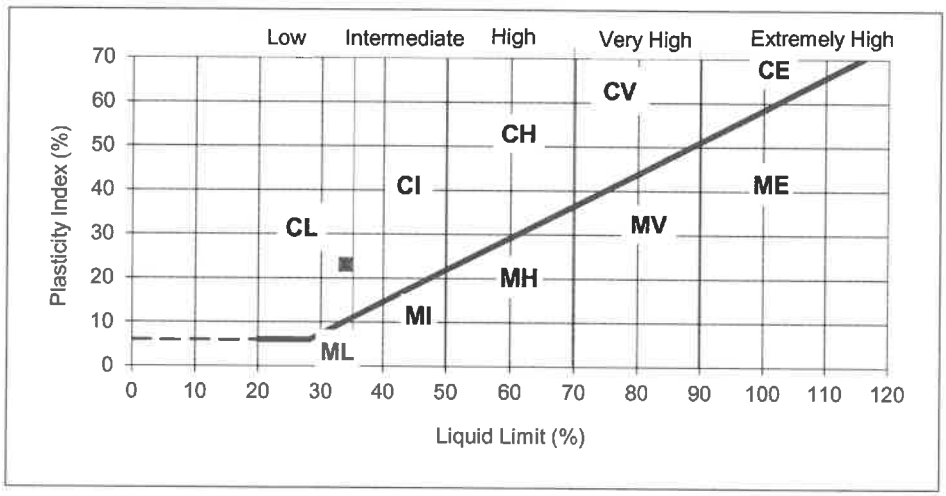
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH302(X)6.5-6.95m	DATE SAMPLED	Not advised
SAMPLE No.	84492	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12	34	11	23	93



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

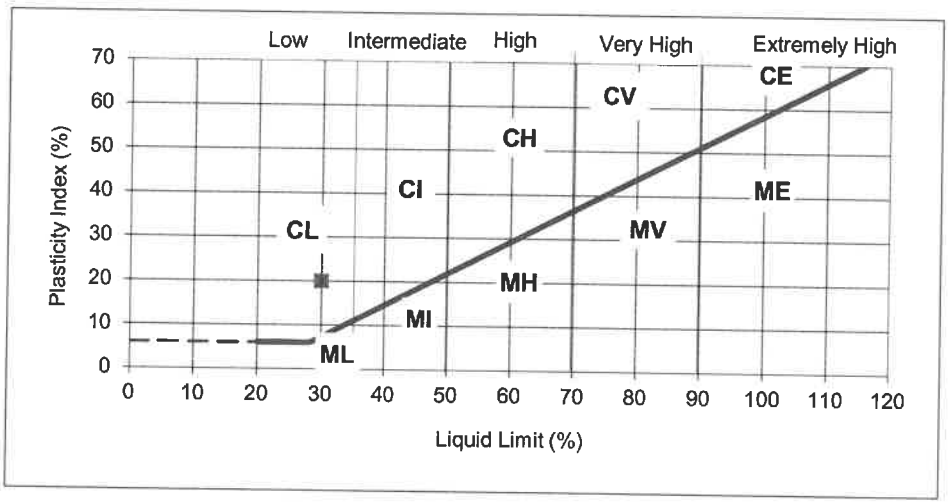
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH302(X)8-8.45m	DATE SAMPLED	Not advised
SAMPLE No.	84493	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
8.1	30	10	20	96



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

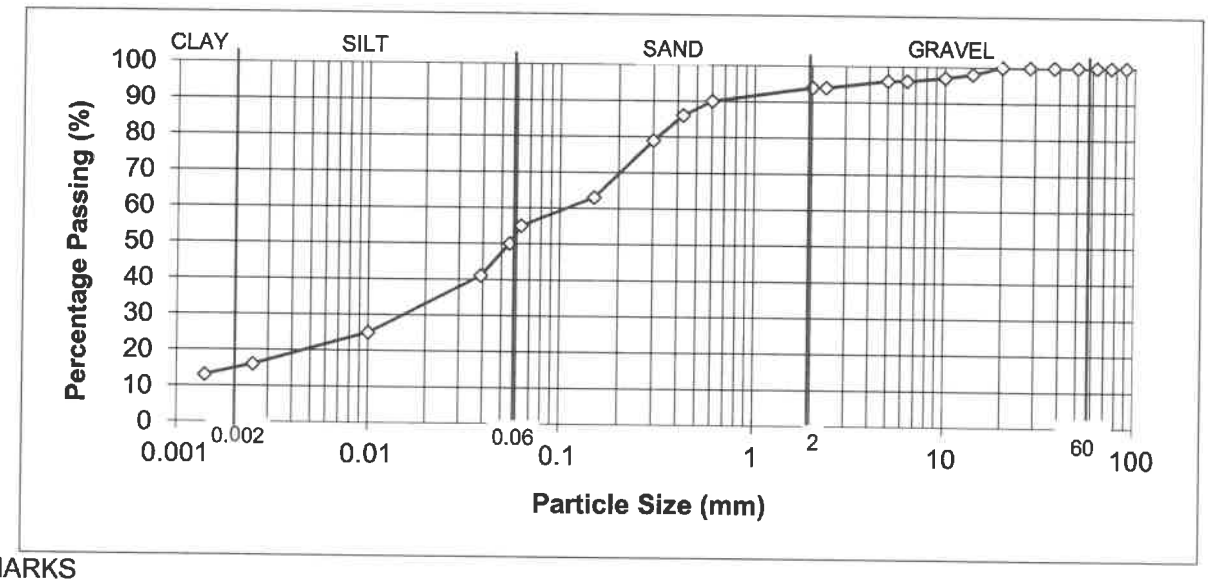
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH303 (B) 1.50-2.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84494	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	94	
90	100		2	94	
75	100		0.6	90	
63	100		0.425	86	
50	100		0.3	79	
37.5	100		0.15	63	
28	100		0.063	55	
20	100		0.055	50	
14	98		0.039	41	
10	97		0.01	25	
6.3	96		0.0025	16	
5	96		0.0014	13	



REMARKS

As received moisture content = 15%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING
1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

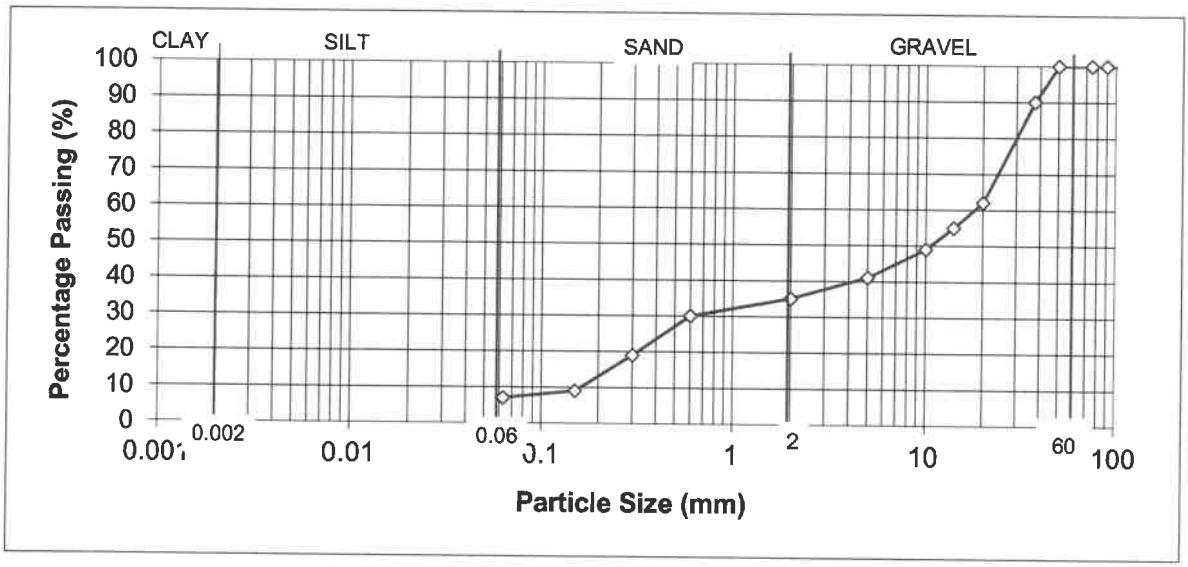
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH303 (B) 2.20-3.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84495	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Brown silty sandy fine to coarse GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		10	49	
90	100		5	41	
75	100		2	35	
50	100		0.6	30	
37.5	90		0.3	19	
20	62		0.15	9	
14	55		0.063	7	



REMARKS
As received moisture content = 8.9%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

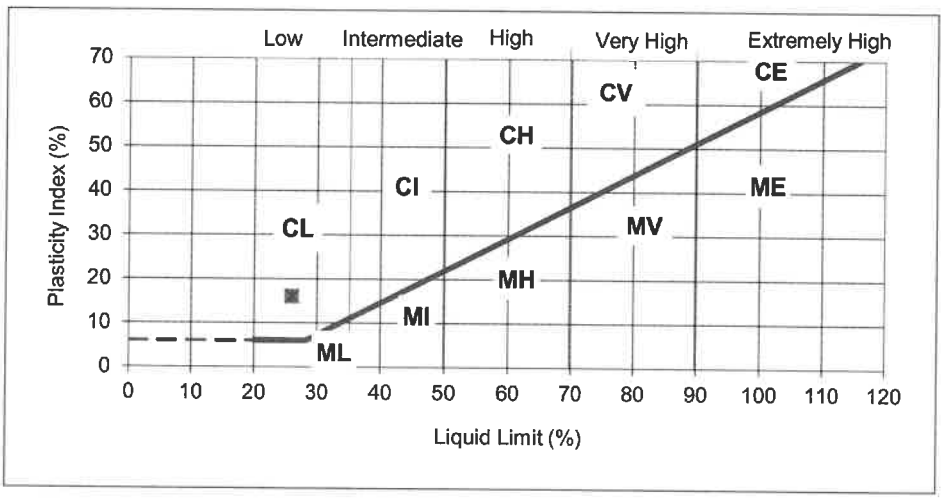
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH303(X)1.2-1.65m	DATE SAMPLED	Not advised
SAMPLE No.	84496	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff grey brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
11	26	10	16	95



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING
1580

TEST CERTIFICATE

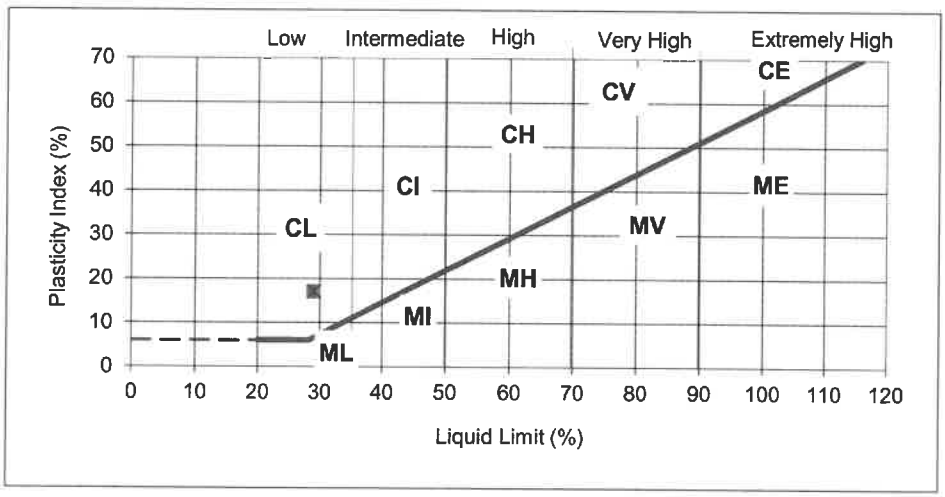
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH303(X)4-4.45m	DATE SAMPLED	Not advised
SAMPLE No.	84498	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff grey brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16	29	12	17	97



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

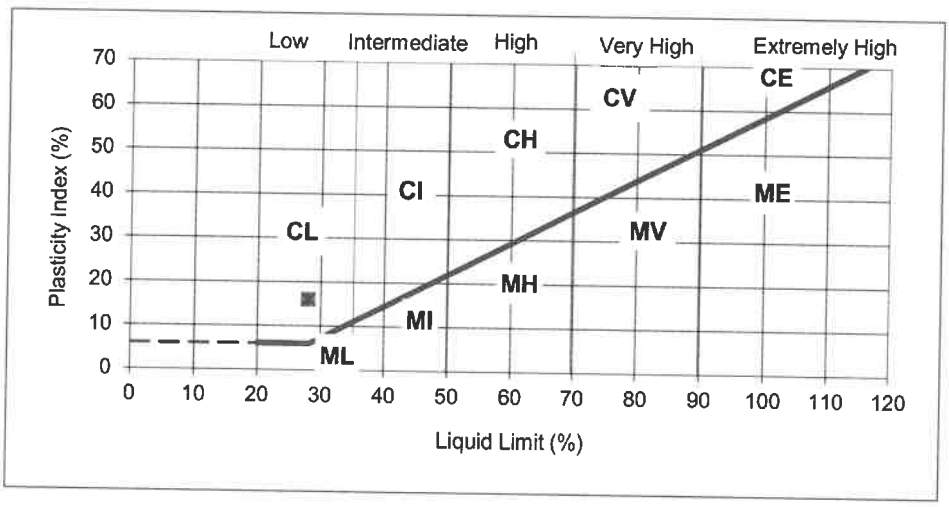
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH303(X)5-5.45m	DATE SAMPLED	Not advised
SAMPLE No.	84500	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff grey brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12	28	12	16	94



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE, GREG STREET
REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

ORGANIC MATTER CONTENT
(Loss on Ignition)
BS 1377: PART 3: 1990

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 – Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304 (D2) 0.5-1.2m	DATE SAMPLED	Not advised
LAB SAMPLE No	84501	DATE RECEIVED	19 July 2019
DATE TESTED	24 July 2019	SAMPLED BY	Client

MATERIAL	Firm to stiff brown silty sandy CLAY with occasional gravel
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried

% Passing 2mm in sample	82	%
Loss on Ignition material passing 2mm (Avg. of 2)	15	%

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02 August 2019

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

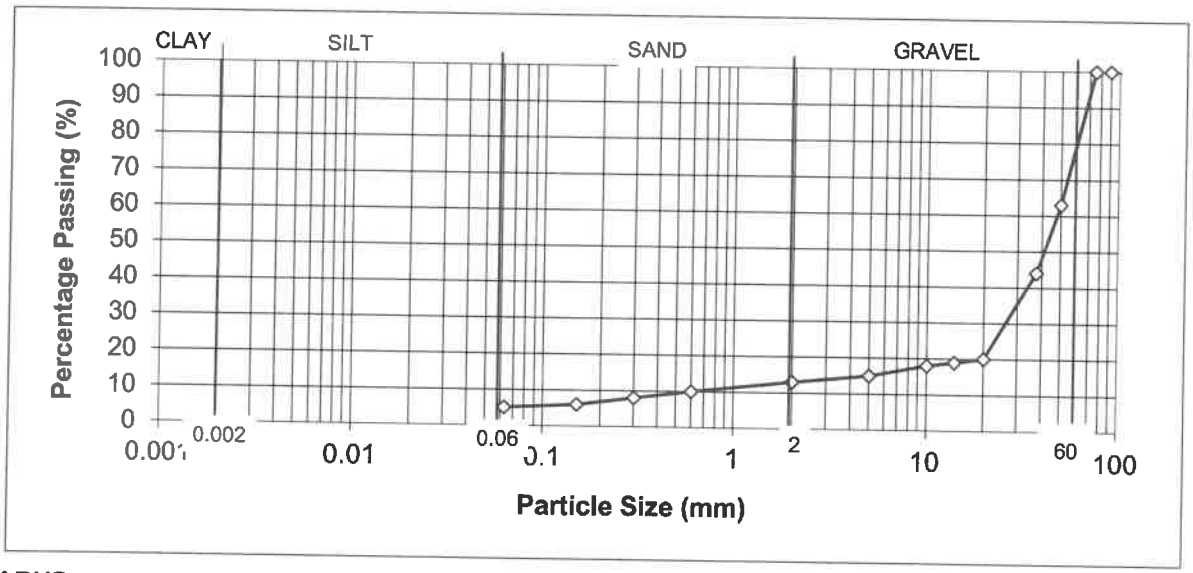
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304 (B) 2.00-2.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84502	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Brown silty sandy fine to coarse GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		10	18	
90	100		5	15	
75	100		2	13	
50	63		0.6	10	
37.5	44		0.3	8	
20	20		0.15	6	
14	19		0.063	5	



REMARKS
As received moisture content = 16%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

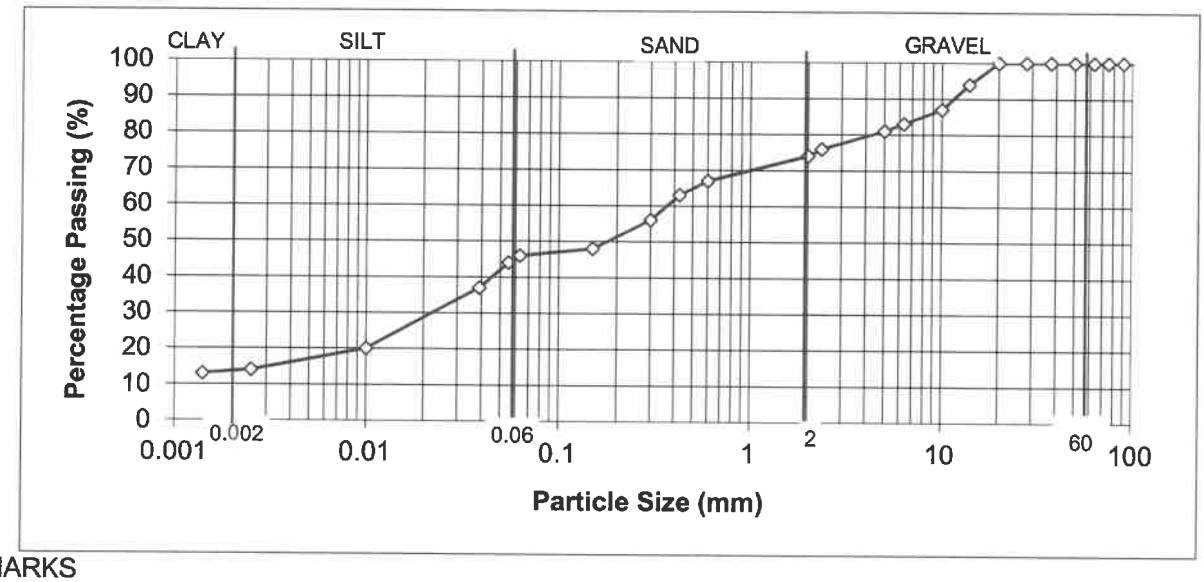
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304 (B) 3.00-3.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84503	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with frequent gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	76	
90	100		2	74	
75	100		0.6	67	
63	100		0.425	63	
50	100		0.3	56	
37.5	100		0.15	48	
28	100		0.063	46	
20	100		0.055	44	
14	94		0.039	37	
10	87		0.01	20	
6.3	83		0.0025	14	
5	81		0.0014	13	



REMARKS

As received moisture content = 15%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

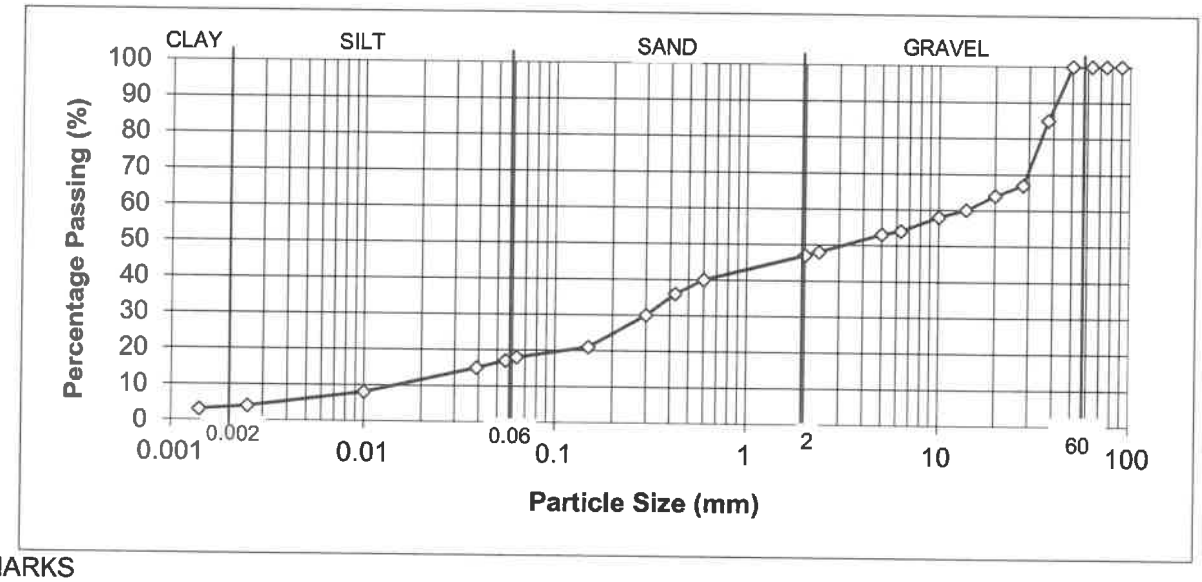
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304 (B) 4.00-4.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84504	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Brown slightly clayey silty sandy GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	48	
90	100		2	47	
75	100		0.6	40	
63	100		0.425	36	
50	100		0.3	30	
37.5	85		0.15	21	
28	67		0.063	18	
20	64		0.055	17	
14	60		0.039	15	
10	58		0.01	8	
6.3	54		0.0025	4	
5	53		0.0014	3	



REMARKS

As received moisture content = 16%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

form omcram

MURRAY RIX

33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

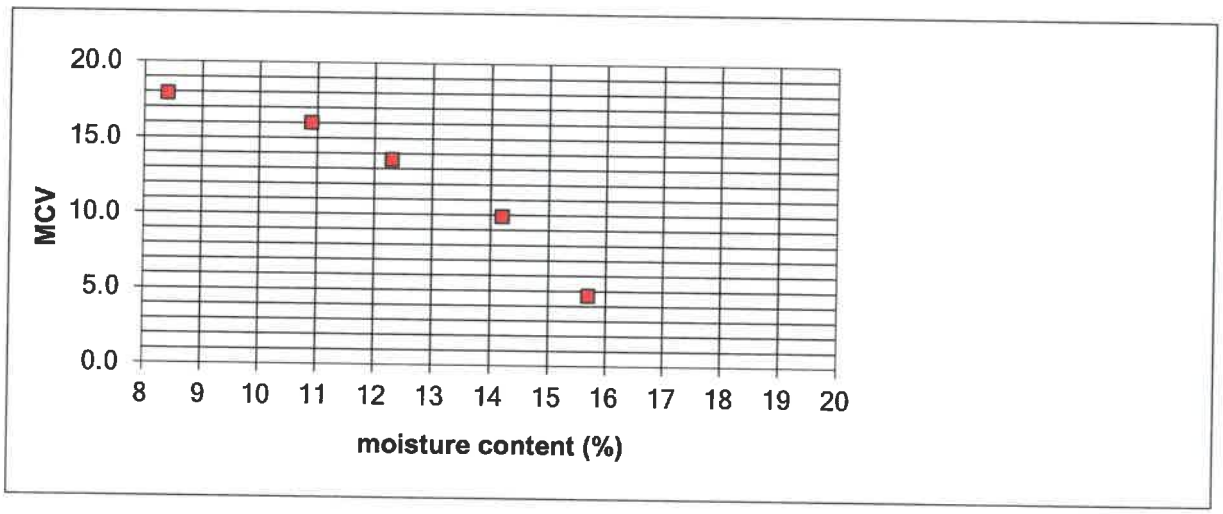
MOISTURE CONDITION VALUE/MOISTURE CONTENT RELATIONSHIP
BS 1377: PART 4: 1990 Clause 5.5

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304(B)6.5-6.95m	DATE SAMPLED	Not advised
LAB SAMPLE No	84506	DATE RECEIVED	19-Jul-19
DATE TESTED	29-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample
PROPORTION LARGER THAN 20 mm	0%

Point Number	Moisture Content (%)	MCV
1	8.4	17.9
2	11	16.0
3	12	13.6
4	14	9.9
5	16	4.7



REMARKS/ABNORMALITIES

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)

DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

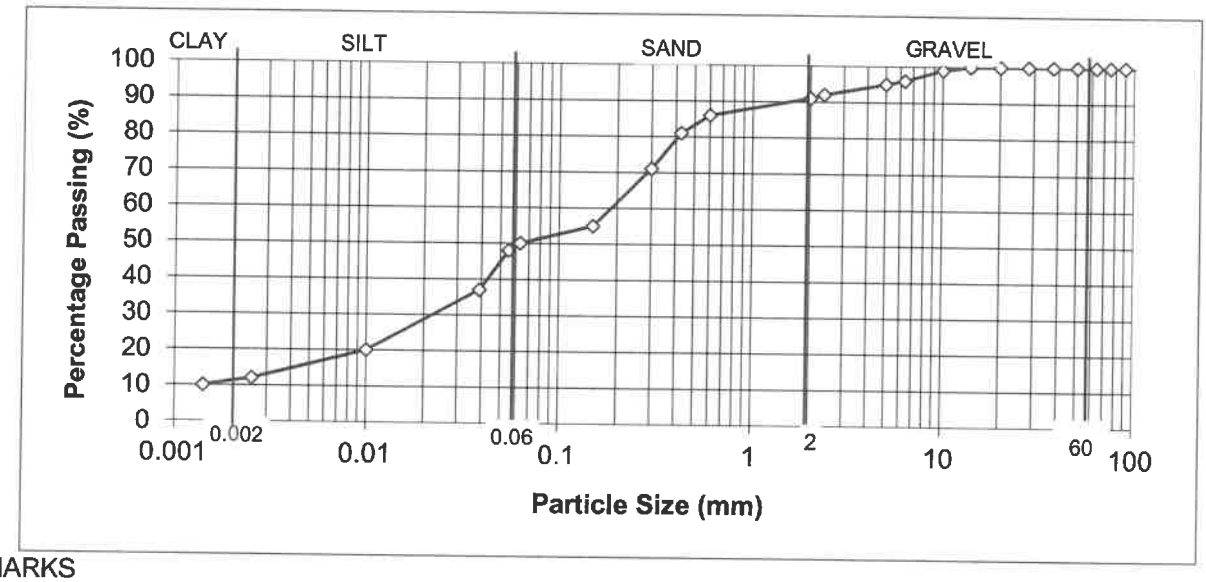
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304 (U100) 8.00-8.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84508	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	92	
90	100		2	91	
75	100		0.6	86	
63	100		0.425	81	
50	100		0.3	71	
37.5	100		0.15	55	
28	100		0.063	50	
20	100		0.055	48	
14	100		0.039	37	
10	99		0.01	20	
6.3	96		0.0025	12	
5	95		0.0014	10	



REMARKS
As received moisture content = 13%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

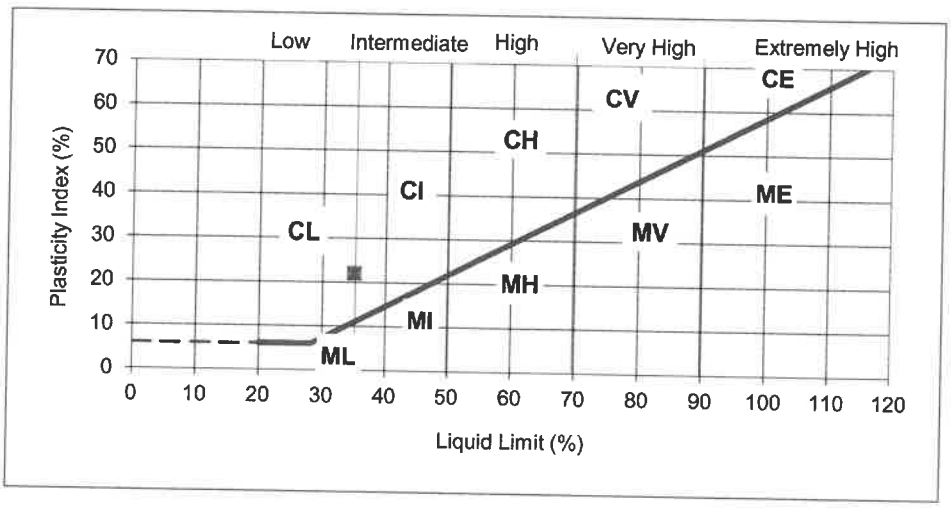
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(U100)8-8.45m	DATE SAMPLED	Not advised
SAMPLE No.	84508	DATE RECEIVED	19-Jul-19
DATE TESTED	26-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
13	35	13	22	81



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE, GREG STREET
REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 161 475N 0871

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS 1377: PART 7: 1990:CLAUSE 9 MULTI STAGE

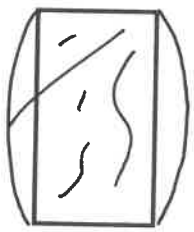
CLIENT	LK Consult Ltd
SITE	LKC 19 1015 – Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH304(U100) 8-8.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84508	DATE RECEIVED	19 July 2019
DATE TESTED	24 July 2019	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation sample

SPECIMEN LENGTH	197	mm
SPECIMEN DIAMETER	103	mm
MOISTURE CONTENT OF SAMPLE	13	%
BULK DENSITY	2.16	Mg/m^3
DRY DENSITY	1.91	Mg/m^3
DEPTH OF TOP OF SPECIMEN	8.10	m
RATE OF STRAIN	2	%/min
RUBBER MEMBRANE THICKNESS	0.6	mm

SPECIMEN AT FAILURE



Measured Cell Pressure (kPa)	Strain at Failure (%)	Membrane Correction (kPa)	Corrected Max Deviator Stress (kPa)	Shear Stress Cu (kPa)
160	17	2.0	227.8	114
240	18	2.0	232.1	116
320	19	2.0	236.0	118

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02 August 2019

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

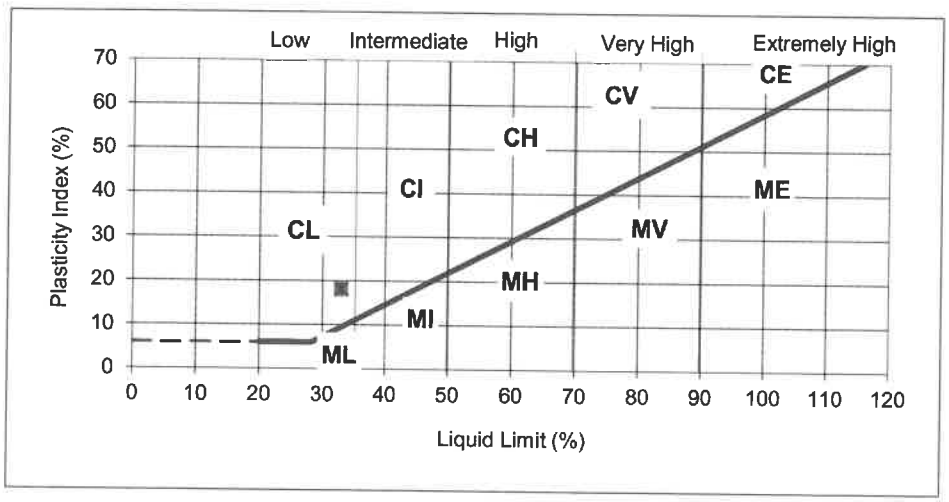
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(X)2-2.45m	DATE SAMPLED	Not advised
SAMPLE No.	84511	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19	33	15	18	90



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING
1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

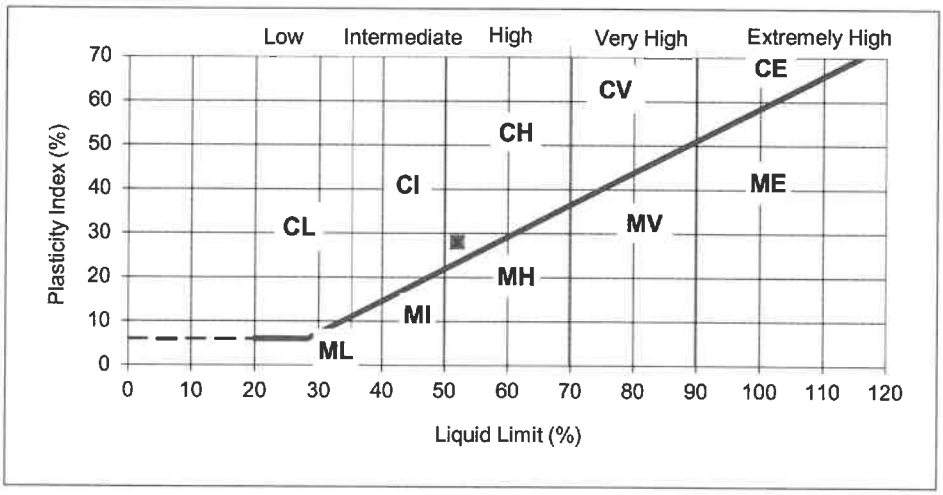
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(X)3-3.45m	DATE SAMPLED	Not advised
SAMPLE No.	84512	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
27	52	24	28	100



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING
1580

TEST CERTIFICATE

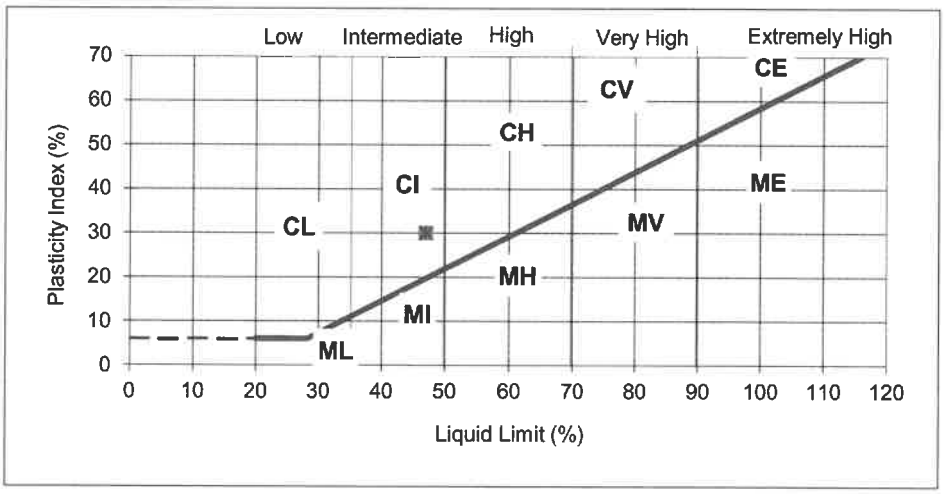
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(X)4-4.45m	DATE SAMPLED	Not advised
SAMPLE No.	84513	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
19	47	17	30	100



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING
1580

TEST CERTIFICATE

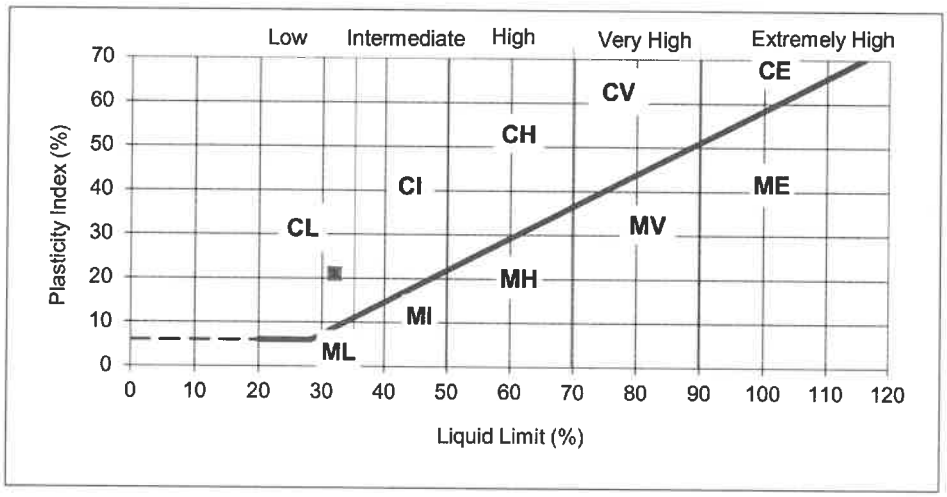
LIQUID AND PLASTIC LIMIT
BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(X)6.5-6.95m	DATE SAMPLED	Not advised
SAMPLE No.	84515	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
14	32	11	21	95



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

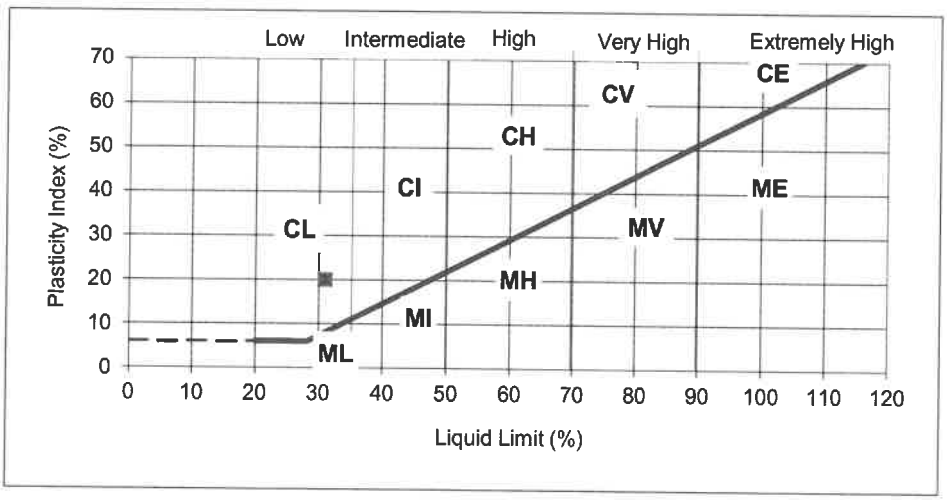
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH304(X)12.5-12.95m	DATE SAMPLED	Not advised
SAMPLE No.	84517	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
9.7	31	11	20	93



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

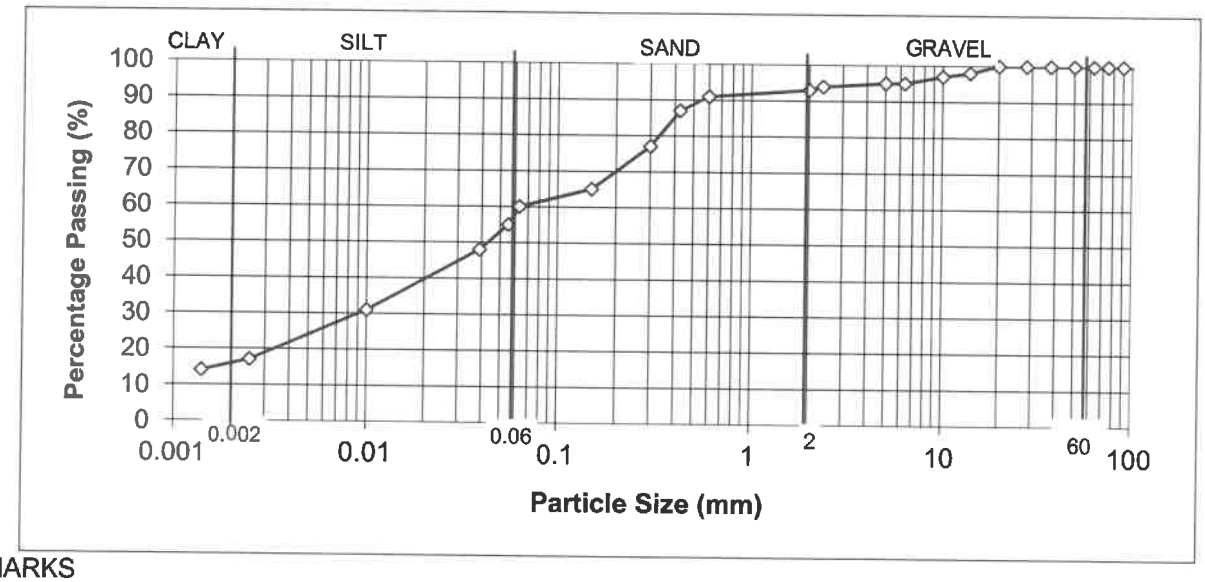
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH305 (B) 1.50-2.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84518	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	94	
90	100		2	93	
75	100		0.6	91	
63	100		0.425	87	
50	100		0.3	77	
37.5	100		0.15	65	
28	100		0.063	60	
20	100		0.055	55	
14	98		0.039	48	
10	97		0.01	31	
6.3	95		0.0025	17	
5	95		0.0014	14	



REMARKS

As received moisture content = 15%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

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MURRAY RIX

33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

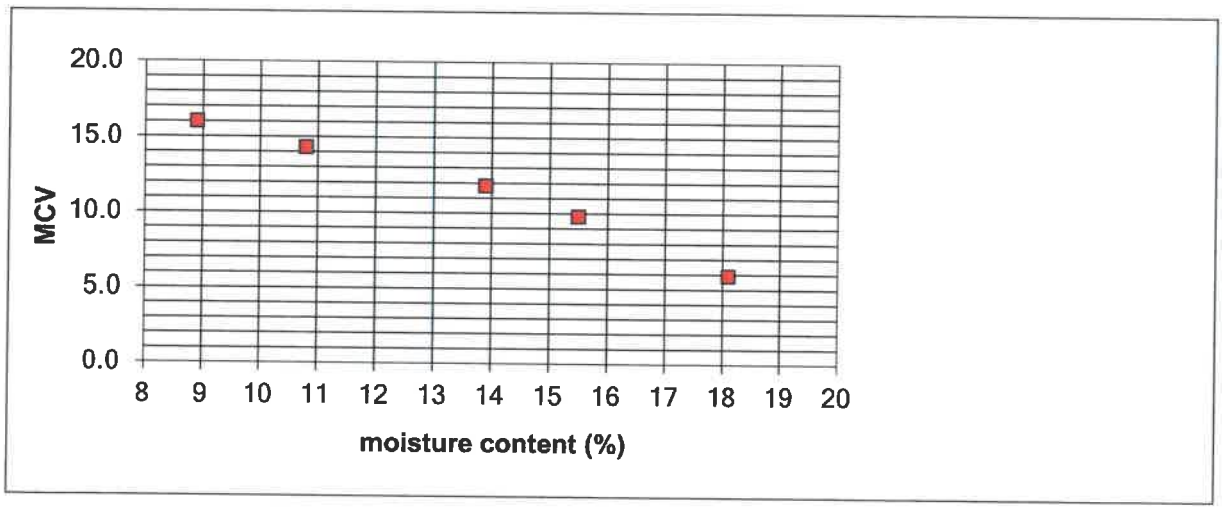
MOISTURE CONDITION VALUE/MOISTURE CONTENT RELATIONSHIP
BS 1377: PART 4: 1990 Clause 5.5

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH305(B)1.5-2.0m	DATE SAMPLED	Not advised
LAB SAMPLE No	84518	DATE RECEIVED	19-Jul-19
DATE TESTED	29-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample
PROPORTION LARGER THAN 20 mm	0%

Point Number	Moisture Content (%)	MCV
1	8.9	16.0
2	11	14.3
3	14	11.8
4	16	9.8
5	18	5.9



REMARKS/ABNORMALITIES

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)

DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

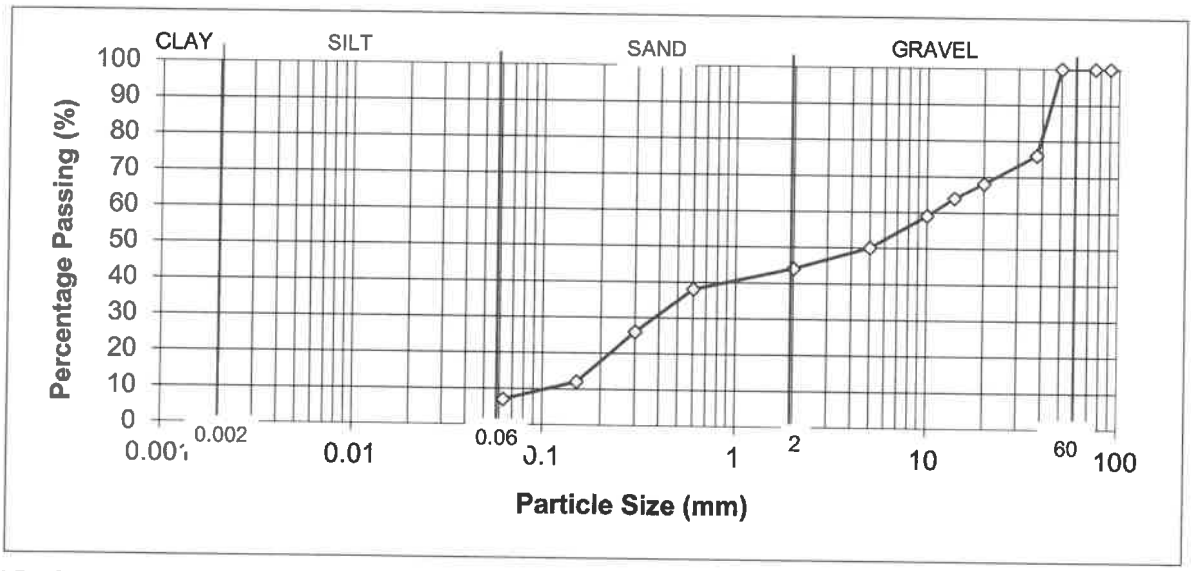
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH305 (B) 3.00-4.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84519	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Brown silty SAND and GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		10	59	
90	100		5	50	
75	100		2	44	
50	100		0.6	38	
37.5	76		0.3	26	
20	68		0.15	12	
14	64		0.063	7	



REMARKS

As received moisture content = 9.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

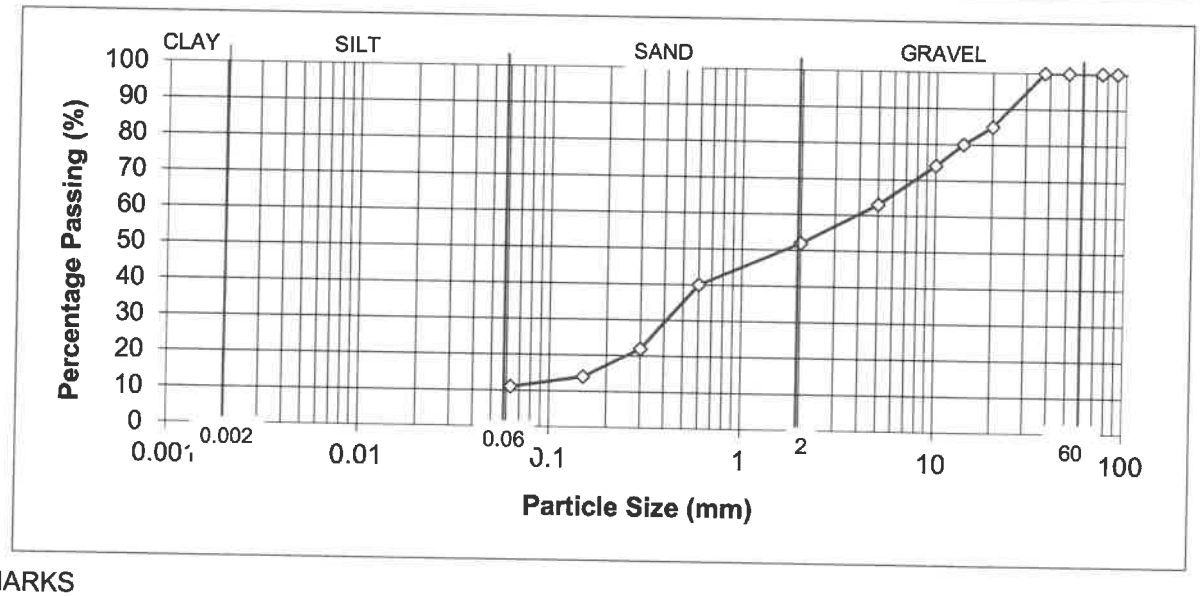
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH305 (B) 4.00-5.00m	DATE SAMPLED	Not advised
LAB SAMPLE No	84520	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Brown silty SAND and GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		10	74	
90	100		5	63	
75	100		2	52	
50	100		0.6	40	
37.5	100		0.3	22	
20	85		0.15	14	
14	80		0.063	11	



REMARKS
As received moisture content = 8.9%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

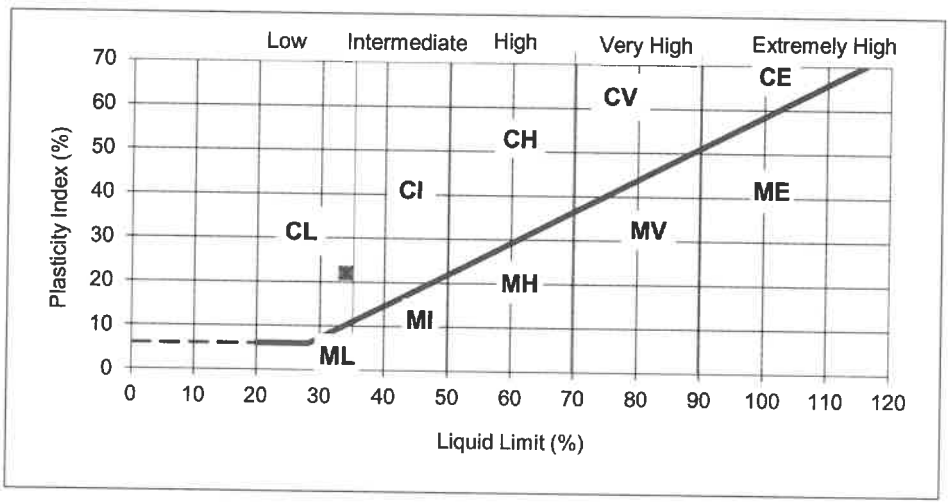
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH305(X) 1.20-1.65m	DATE SAMPLED	Not advised
SAMPLE No.	84521	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
15	34	12	22	92



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

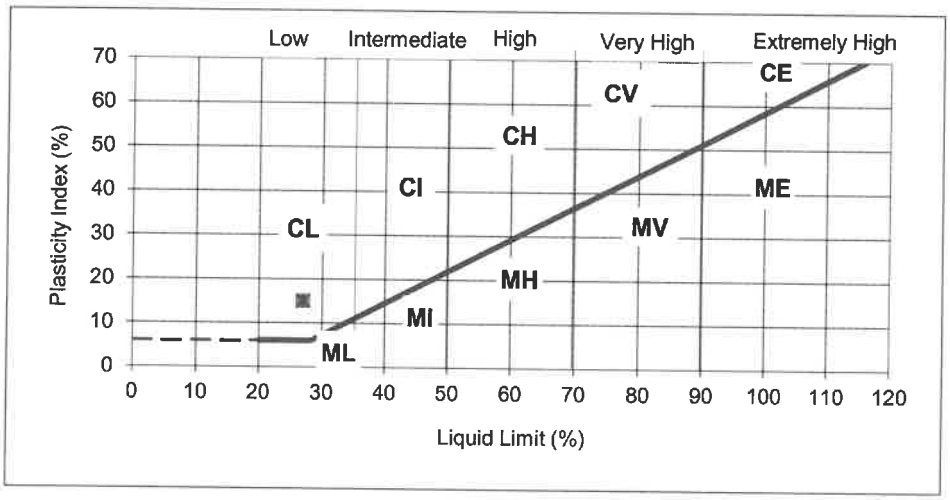
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH305(X)2-2.45m	DATE SAMPLED	Not advised
SAMPLE No.	84522	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
13	27	12	15	92



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

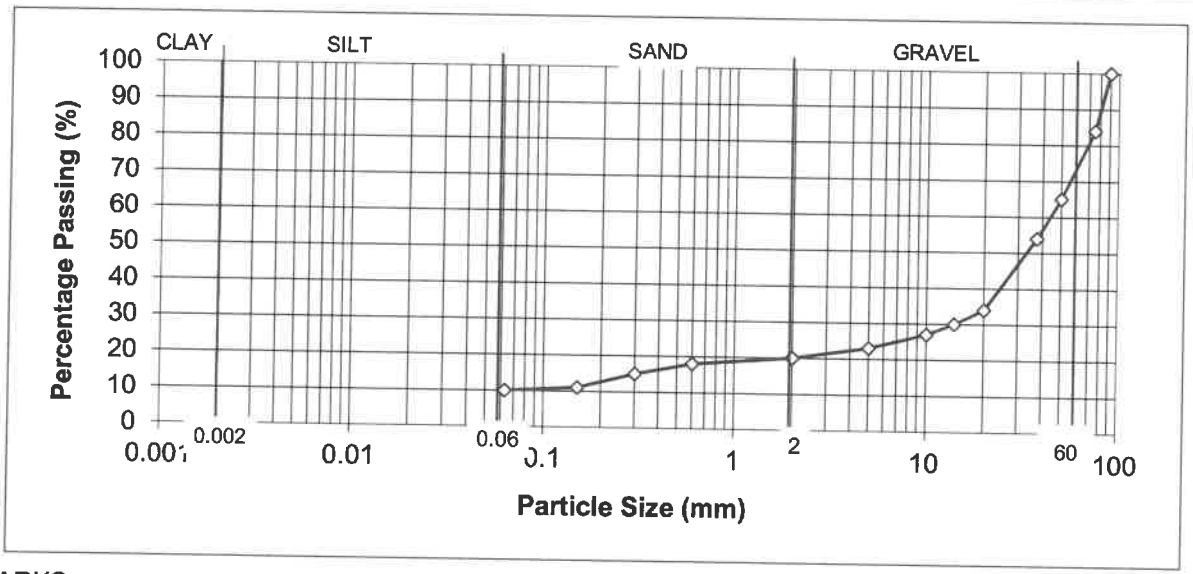
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH306 (B) 1.20-1.65m	DATE SAMPLED	Not advised
LAB SAMPLE No	84524	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Brown silty sandy fine to coarse GRAVEL
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		10	27	
90	100		5	23	
75	84		2	20	
50	65		0.6	18	
37.5	54		0.3	15	
20	34		0.15	11	
14	30		0.063	10	



REMARKS
As received moisture content = 11%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

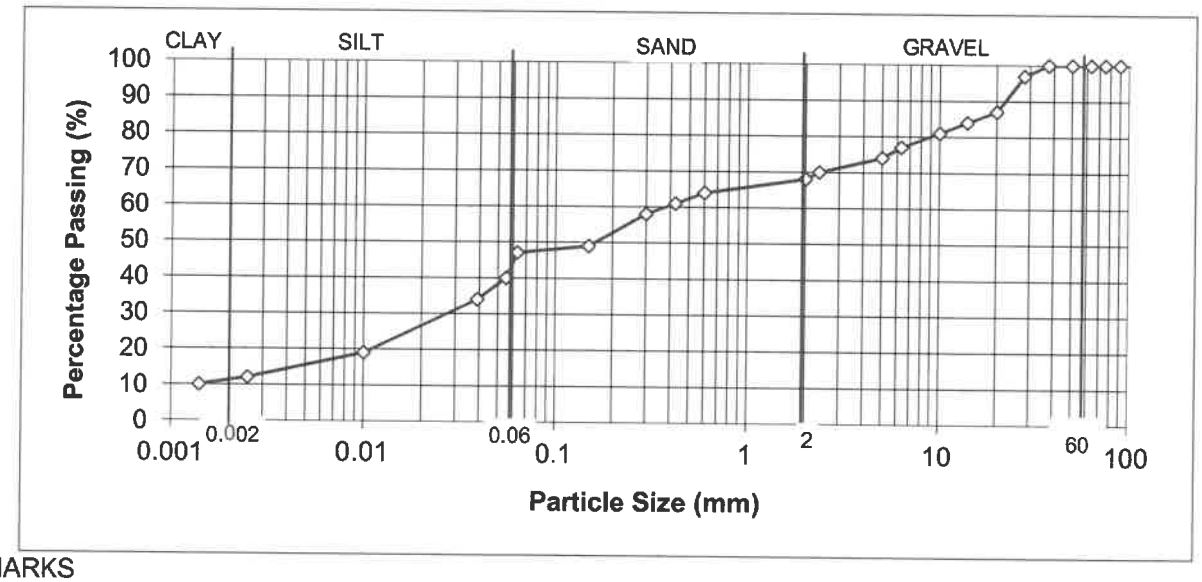
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH306 (B) 3.00-3.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84526	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Firm brown silty sandy CLAY with abundant gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	70	
90	100		2	68	
75	100		0.6	64	
63	100		0.425	61	
50	100		0.3	58	
37.5	100		0.15	49	
28	97		0.063	47	
20	87		0.055	40	
14	84		0.039	34	
10	81		0.01	19	
6.3	77		0.0025	12	
5	74		0.0014	10	



REMARKS

As received moisture content = 19%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
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TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

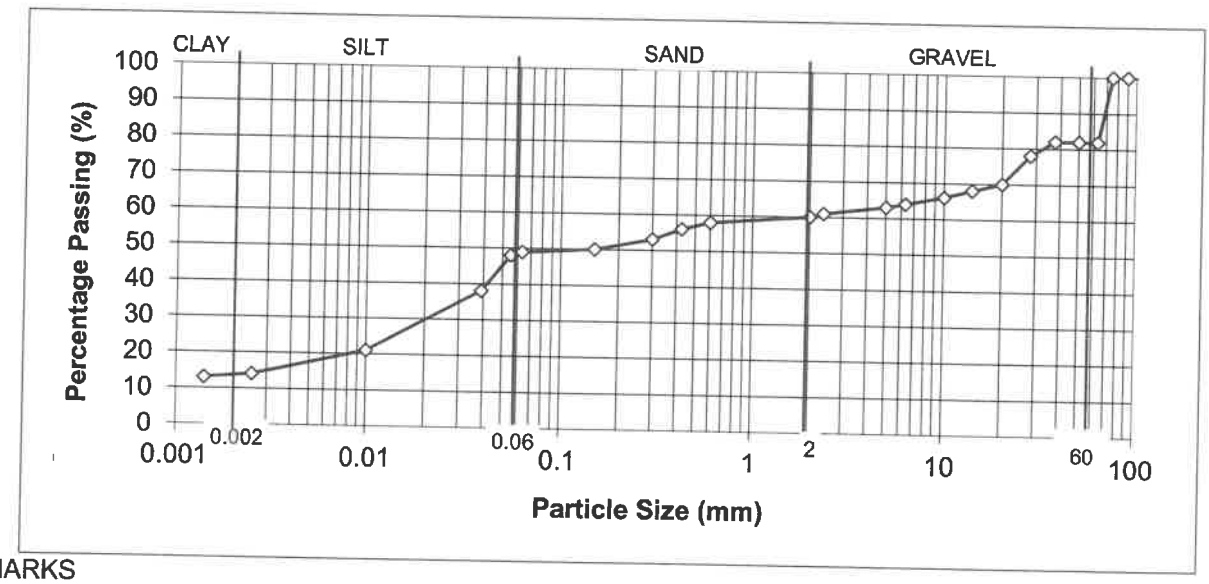
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH306 (B) 5.00-5.45m	DATE SAMPLED	Not advised
LAB SAMPLE No	84527	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Firm brown silty sandy CLAY with abundant gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	61	
90	100		2	60	
75	100		0.6	58	
63	82		0.425	56	
50	82		0.3	53	
37.5	82		0.15	50	
28	78		0.063	49	
20	70		0.055	48	
14	68		0.039	38	
10	66		0.01	21	
6.3	64		0.0025	14	
5	63		0.0014	13	



REMARKS

As received moisture content = 17%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

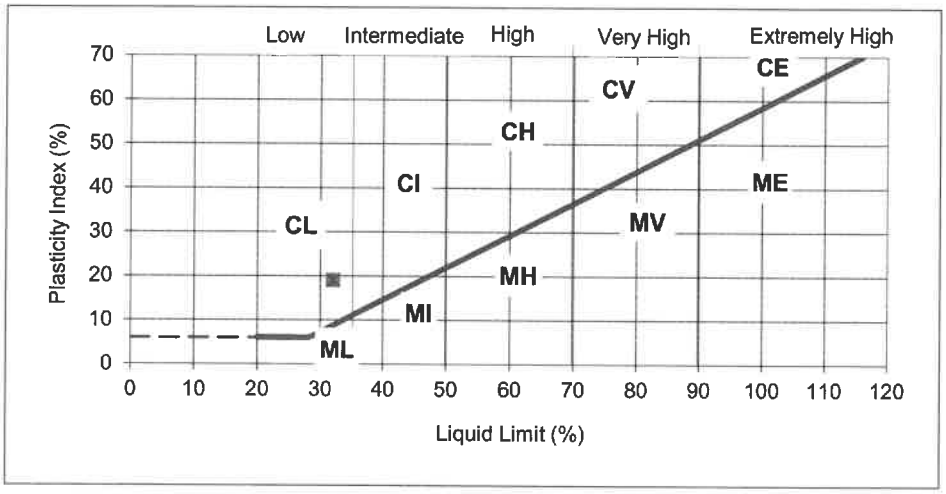
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH306 (D) 7.60m	DATE SAMPLED	Not advised
SAMPLE No.	84528	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Firm brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17	32	13	19	95



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

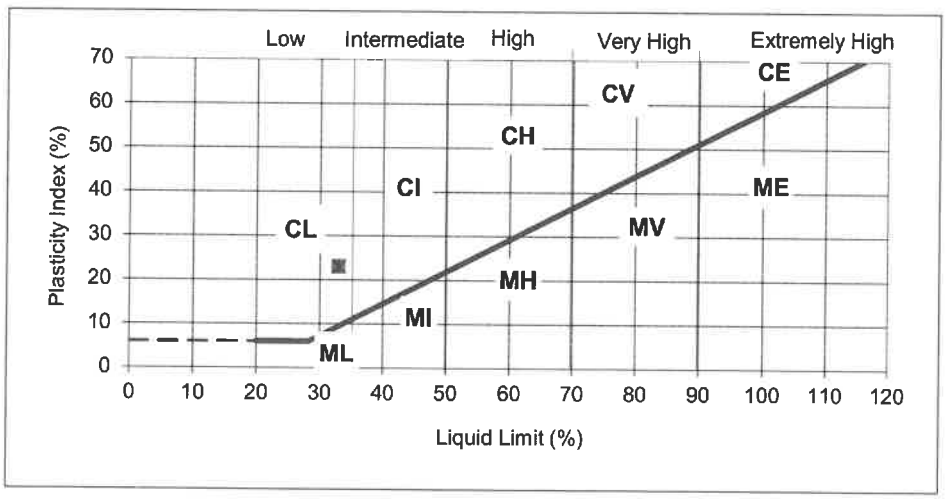
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH306 (D) 8.80m	DATE SAMPLED	Not advised
SAMPLE No.	84530	DATE RECEIVED	19-Jul-19
DATE TESTED	22-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12	33	10	23	93



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.5: 1990

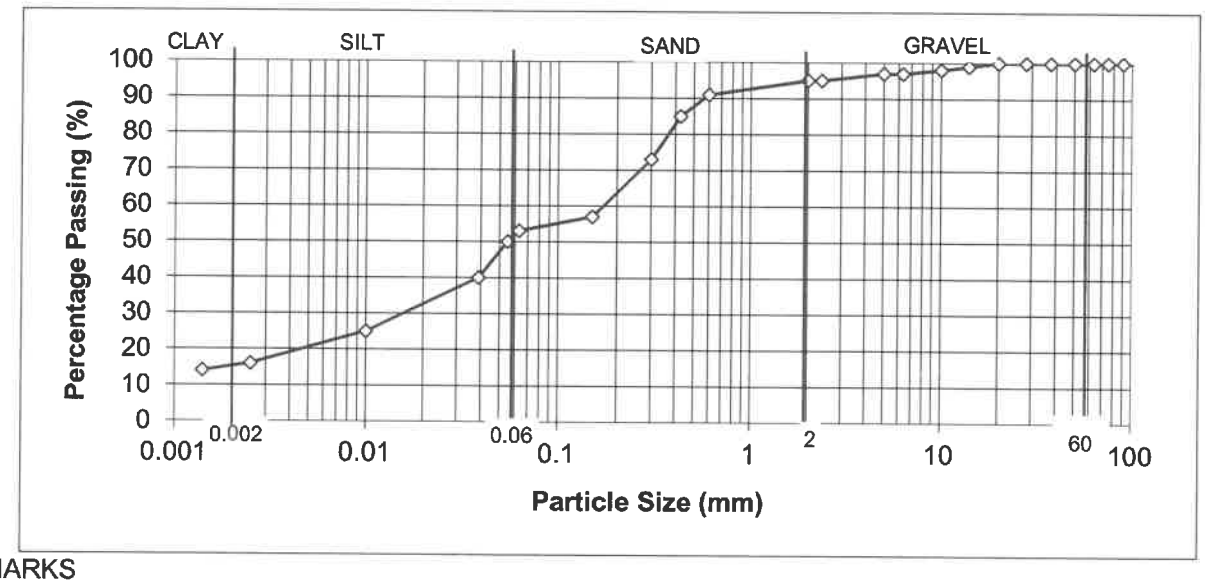
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/94

SAMPLE LABEL	BH306 (B) 9.5-9.95m	DATE SAMPLED	Not advised
LAB SAMPLE No	84531	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Firm brown silty very sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2.36	95	
90	100		2	95	
75	100		0.6	91	
63	100		0.425	85	
50	100		0.3	73	
37.5	100		0.15	57	
28	100		0.063	53	
20	100		0.055	50	
14	99		0.039	40	
10	98		0.01	25	
6.3	97		0.0025	16	
5	97		0.0014	14	



REMARKS

As received moisture content = 12%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 02-Aug-19

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

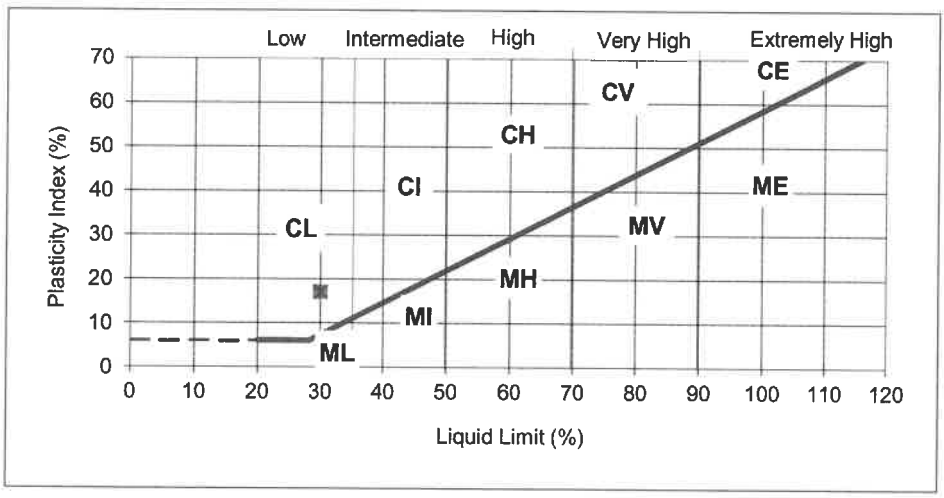
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH306(X)8-8.45m	DATE SAMPLED	Not advised
SAMPLE No.	84538	DATE RECEIVED	19-Jul-19
DATE TESTED	23-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY with rare gravel
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
14	30	13	17	93



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons) DATE 05-Aug-19
(Laboratory Manager)

MURRAY RIX

33C Vauxhall Ind. Estate, Greg Street
Reddish, Stockport SK5 7BR
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UKAS TESTING 1580

TEST CERTIFICATE

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

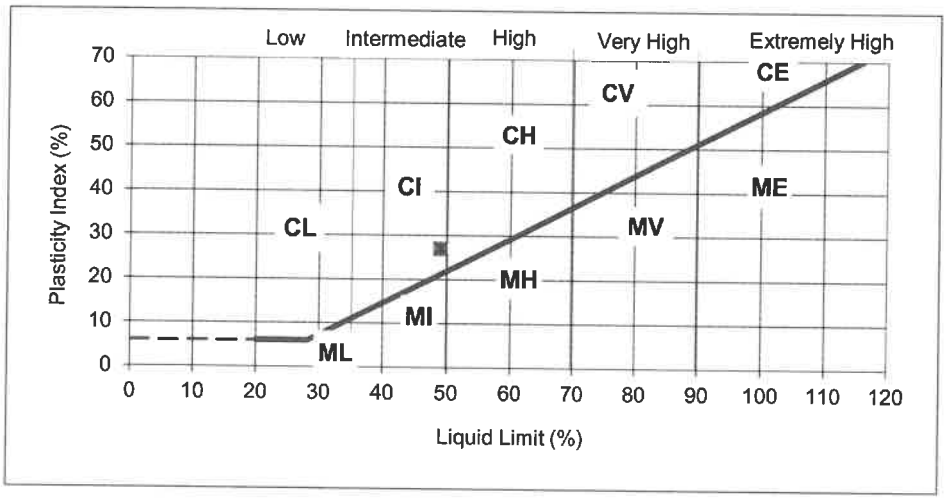
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Junction 19, Heywood
JOB NUMBER	MRN 3524/93

SAMPLE LABEL	BH306(X)11-11.45m	DATE SAMPLED	Not advised
SAMPLE No.	84539	DATE RECEIVED	19-Jul-19
DATE TESTED	25-Jul-19	SAMPLED BY	Client

MATERIAL	Stiff brown silty sandy CLAY
ADVISED SOURCE	Site Investigation Sample

Moisture Content (Natural) (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
24	49	22	27	99



REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-19

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client	LK Consult Ltd
Address	Unit 29 Eton Business Eton Hill Road Radcliffe Greater Manchester M26 2ZS
Contract	LKC 19 1015 - Heywood
Job Number	MRN 3524/98
Date of Issue	13 August 2019
Page	**1 of 12**

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted. This does not, however, guarantee the balance of the materials from which the tested samples have been taken to be of equal quality.

UKAS TESTING 1580
33C, Vauxhall Industrial Estate, Greg Street, Reddish, Stockport SK5 7BR Tel: 0161 475 0870 Fax: 0161 475 0871
Email: steve@mtt-uk.com Website: www.murrayrix.com
Also at: London: 020 8523 1999
Murray Rix is the trading name of Murray Rix (Northern) Limited. Registered in England 2878361

MURRAY RIX
33C VAUXHALL INDUSTRIAL ESTATE
GREG STREET, REDDISH, STOCKPORT SK5 7BR
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING
1580

TEST CERTIFICATE

MOISTURE CONTENT DETERMINATION
BS 1377 : PART 2 : CLAUSE 3.2 : 1990 (OVEN DRY)

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

DATE SAMPLED	Not advised	SAMPLED BY	Client
DATE TESTED	06 August 2019	DATE RECEIVED	31 July 2019

Sample No	Site Reference	Material	Date Sampled	Moisture Content %
84763	BH301 / 30.00-30.60	Rock Core	Not advised	1.1
84764	BH301 / 31.00-31.30	Rock Core	Not advised	1.5
84770	BH303 / 15.80-16.00	Rock Core	Not advised	2.4
84771	BH304 / 20.70-20.90	Rock Core	Not advised	3.3

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13 August 2019

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH301 / 30.00-30.60	DATE SAMPLED	Not advised
LAB SAMPLE No	84763	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		11	7396.00	86.00	1.49	1.28	1.90
2	A	86	43	22	4708.44	68.62	4.67	1.15	5.39
3	A	86	42	20	4598.94	67.82	4.35	1.15	4.99
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH301 / 31.00-31.30	DATE SAMPLED	Not advised
LAB SAMPLE No	84764	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		8	7396.00	86.00	1.08	1.28	1.38
2	A	86	45	14	4927.44	70.20	2.84	1.16	3.31
3	A	86	43	15	4708.44	68.62	3.19	1.15	3.67
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH301 / 34.40-34.60	DATE SAMPLED	Not advised
LAB SAMPLE No	84765	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		5.2	7396.00	86.00	0.70	1.28	0.90
2	A	86	49	13	5365.43	73.25	2.42	1.19	2.88
3	A	86	50	11	5474.93	73.99	2.01	1.19	2.40
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX
UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH302 / 18.00-18.15	DATE SAMPLED	Not advised
LAB SAMPLE No	84766	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		0.8	7396.00	86.00	0.11	1.28	0.14
2	A	86	50	1.2	5474.93	73.99	0.22	1.19	0.26
3	A	86	46	1	5036.94	70.97	0.20	1.17	0.23
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH302 / 18.70-18.80	DATE SAMPLED	Not advised
LAB SAMPLE No	84767	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		4.6	7396.00	86.00	0.62	1.28	0.79
2	A	86	45	12	4927.44	70.20	2.44	1.16	2.84
3	A	86	50	11	5474.93	73.99	2.01	1.19	2.40
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH302 / 19.50-19.60	DATE SAMPLED	Not advised
LAB SAMPLE No	84768	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		4	7396.00	86.00	0.54	1.28	0.69
2	A	86	49	10	5365.43	73.25	1.86	1.19	2.21
3	A	86	46	8	5036.94	70.97	1.59	1.17	1.86
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH304 / 20.70-20.90	DATE SAMPLED	Not advised
LAB SAMPLE No	84771	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		0.6	7396.00	86.00	0.08	1.28	0.10
2	A	86	55	2.2	6022.42	77.60	0.37	1.22	0.45
3	A	86	47	2.4	5146.43	71.74	0.47	1.18	0.55
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

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GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH305 / 11.50-11.60	DATE SAMPLED	Not advised
LAB SAMPLE No	84772	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		1.4	7396.00	86.00	0.19	1.28	0.24
2	A	86	37	3	4051.45	63.65	0.74	1.11	0.83
3	A	86	42	3.2	4598.94	67.82	0.70	1.15	0.80
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

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NAME O.P. Davies BA (Hons)
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TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH305 / 12.30-12.40	DATE SAMPLED	Not advised
LAB SAMPLE No	84773	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		0.6	7396.00	86.00	0.08	1.28	0.10
2	A	86	38	4.5	4160.95	64.51	1.08	1.12	1.21
3	A	86	31	3.8	3394.46	58.26	1.12	1.07	1.20
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

MURRAY RIX

UNIT 33C, VAUXHALL INDUSTRIAL ESTATE
GREG STREET, STOCKPORT SK5 7BR
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	LK Consult Ltd
SITE	LKC 19 1015 - Heywood
JOB NUMBER	MRN 3524/98

SAMPLE LABEL	BH305 / 14.40-14.70	DATE SAMPLED	Not advised
LAB SAMPLE No	84774	DATE RECEIVED	31-Jul-19
DATE TESTED	07-Aug-19	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation Sample

Sample Number	Test Type	D (mm)	*W (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
1	D	86		1.2	7396.00	86.00	0.16	1.28	0.21
2	A	86	42	6	4598.94	67.82	1.30	1.15	1.50
3	A	86	50	8	5474.93	73.99	1.46	1.19	1.74
4					0.00	0.00	0.00	0.00	0.00
5					0.00	0.00	0.00	0.00	0.00
6					0.00	0.00	0.00	0.00	0.00
7					0.00	0.00	0.00	0.00	0.00
8					0.00	0.00	0.00	0.00	0.00
9					0.00	0.00	0.00	0.00	0.00
10					0.00	0.00	0.00	0.00	0.00
11					0.00	0.00	0.00	0.00	0.00
12					0.00	0.00	0.00	0.00	0.00
13					0.00	0.00	0.00	0.00	0.00
14					0.00	0.00	0.00	0.00	0.00
15					0.00	0.00	0.00	0.00	0.00
16					0.00	0.00	0.00	0.00	0.00
17					0.00	0.00	0.00	0.00	0.00
18					0.00	0.00	0.00	0.00	0.00
19					0.00	0.00	0.00	0.00	0.00
20					0.00	0.00	0.00	0.00	0.00

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 13-Aug-19

Appendix G

Core Box Photographs

BH301



Photograph 1:
BH301 core run from 28.00-31.00mbgl.



Photograph 2:
BH301 core run from 31.00-34.00mbgl.



Photograph 3:
BH301 core run from 34.00-37.00mbgl.



Photograph 4:
BH301 core run from 37.00-38.00mbgl.

BH302



Photograph 5:
BH302 core run from 15.00-18.00mbgl.



Photograph 6:
BH302 core run from 18.00-20.00mbgl.

BH303



Photograph 7:
BH303 core run from 13.00-16.00mbgl.



Photograph 8:
BH303 core run from 16.00-18.00mbgl.

BH304



Photograph 9:
BH304 core run from 14.50-17.00mbgl.



Photograph 10:
BH303 core run from 17.00-19.50mbgl.



Photograph 11:
BH303 core run from 20.00-23.00mbgl.

BH305



Photograph 12:
BH305 core run from 11.00-14.00mbgl.



Photograph 13:
BH305 core run from 14.00-16.00mbgl.

BH306



Photograph 14:
BH306 core run from 14.00-17.00mbgl.

Based across the UK with offices in Manchester, London, Liverpool and Glasgow.

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- Project Management
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