

Mr P Barraclough-Smith
Gleeson Developments Ltd
6 Europa Court
Sheffield Business Park
Sheffield
S9 1XE

JMW/KE/04/33662

27 April 2011

Dear Pete

Lowfield Road, Bolton upon Dearne

We write with our supplementary report for the land adjacent to the proposed development off Lowfield Road. This has an area of about 3.4 hectares and extends about 180 m south of that site. This report should be read in conjunction with our site investigation report for the proposed Lowfield Road development, reference 33662-01. The majority of the Phase 1 information for this land will be the same as reported on for the Lowfield Road development. Any differences are reported on below. An Exploratory Hole Location Plan (drawing reference 33662/002A) is attached, showing the position of the trial pits across the site.

Phase 1

Site Description

The 'extra' area of land immediately to the south of the proposed development is covered with similar surface rubble materials to the original site. The site's access road continues onto a concrete ramp, situated in the centre of the site. Adjacent to this ramp, the level of the site slopes down to a plateau where a building was once present.

Land to the south west of the ramp slopes up to a plateau where soil bunds are present. The site then slopes steeply down to the adjacent sewage works, and also down towards the site to the east. Land to the south of the former building also features soil bunds and also ditches. A spring is also shown near the southern site boundary. The area of the site adjacent to the sewage works is currently a small field.

Also at:- Pearson Court, 3 Kings Road, Fleet, Hampshire, GU51 3DL Tel: 01252 360580 Fax: 01252 360581

Directors: G M Seaman BSc, CEng, FICE, FStructE S D Preston BEng, CEng, FICE, FStructE N J Baines BSc, CEng, MICE, MCIWEM
P Richardson BSc, CEng, MICE, MStructE J M Wood BSc, CEng, MICE, FStructE M J Yates BSc(Eng), ACGI, CEng, MICE, FStructE
S R Ellis, BEng, CEng, MStructE, AMICE K R Pursall BEng, CEng MStructE
Senior Associates: K Newsome BSc, CEng, MICE, MStructE S J Mitchell BSc, MSc, CEng, MEI, MCIBSE, MASHRAE
Associates: A Jones BEng, CEng, MICE, MStructE M Young MA, CEng, MICE, MStructE A Allison B.Eng
C A Wood BSc, CEng, MStructE, AMICE C A Topliss BSc, CEnv, CSci, CGeol, AMICE, FGS

Eastwood & Partners (Consulting Engineers) Limited Registered No 1835021

Site History

The site history is similar to that described in the Phase 1 report for the land to the north, but with NE section of the extra area of land featuring a building from around 2000 until 2003.

Geology

The geology is similar to that reported in the Phase 1 report for the land to the north, but with a fault crossing the site's south western site boundary, trending north west to south east, down thrown to the north east.

The Envirocheck Report shows the approximate position of a borehole (SE40SE216) near to the centre of this area. This borehole log has been obtained from the BGS and is attached. The borehole was drilled to 17 m and encountered sand to 1.6 m, coal to 1.7 m, clay to 2.4 m over mudstone bedrock.

Groundwater Abstractions

One groundwater abstraction point is registered within 250 m of the site, placed at around 180 m to the south, used for pond level maintenance.

Ground Conditions

Trial pits TP14 to TP25 were excavated across this site on 23 March 2011, as well three trenches, SP1 to SP3, pulled through soil bunds.

TP14 to 18 were excavated within the former building that covered the majority of the site and encountered up to 1.7 m of made ground. TP16 encountered 2.7 m of made ground but this was backfill adjacent to a retaining wall. The natural ground was found to be similar to that found previously i.e. clay or sand over sandstone.

TP19 and TP20 were excavated within the position of the former eastern building and encountered 0.3 m of made ground over sand and strong sandstone.

TP23 and TP24 were excavated within the raised area of the south western section of the site. TP24 encountered around 2.5 m of made ground over pipe bedding. TP23 encountered up to 1.4 m of made ground over what looks like natural sand. However, this trial pit was excavated within a raised area of the site, which is bordered by steep embankments to the south and east. It is possible that this sand could be made ground.



Further investigation may be required in the southern section of the site to assess the ground conditions more thoroughly. Gas monitoring may be required if deep made ground is encountered and is to remain beneath housing.

SP1 and SP2 were trenched through the soil bund to the north of the former eastern building. Topsoil was encountered to 0.6 and at least 1.2 m respectively over natural sand. SP3 was excavated through a bund in the SW section of the site and encountered a poor quality topsoil with concrete and sandstone boulders.

Chemical Testing

Made Ground

Two samples of surface made ground (TP14 and TP18) were tested. One sample recorded an elevated chromium (610 mg/kg compared to a threshold of 130 mg/kg) and an elevated benzo(a)pyrene (68 compared to 1.0 mg/kg).

The chromium and BaP results were high. In the SI report for the land to be developed to the north, samples of the same made ground were also tested and concentrations of chromium and BaP were found to be less than 21 and 1.1 mg/kg respectively. We asked the lab to double check the anomalously high results, but the check did not reveal any different results much to our surprise.

The elevated chromium result that was recorded was a 'total' value. The most harmful chromium species, chromium VI, did not record concentrations over the 4 mg/kg threshold. The PAH contamination also seemed excessively high and does not appear to be consistent throughout the other samples of the same material.

It is likely therefore that the sample TP14 0.1 m has picked up a very small hotspot of contamination. Further chromium and BaP testing around this trial pit will be required to determine if a hot spot of contamination is present.

Topsoil

Four samples of topsoil were tested, and none of the tested determinands recorded elevated concentrations over their respective thresholds.

Natural Ground

One sample of natural ground was tested. None of the tested determinands exceeded their respective thresholds.

Remedial Measures

The topsoil on site currently exists in soil bunds in the eastern portion of the site, and across the small field in the SE. The material can be considered to be suitable for use in the proposed development, pending regulatory approval.

As with the SI report for the land adjoining the north, remedial measures should not be necessary on this extra portion of the site. This assumes that the recommended further testing around TP14 shows no significant contamination to be present.

However, if during any further investigation materials are found that look particularly contaminative, further assessment will be required.

Recommendations

Natural ground was found at relatively shallow depth across the majority of the area, indicating unreinforced strip footings will be suitable. However, possible deep fill is potentially present in the southern section of the site, which may require piled or raft foundations. Ground bearing slabs should be appropriate across the site provided the depth of made ground below the slabs is less than 600 mm. However, it is likely that some levelling of the site will be carried out. Reinforced suspended slabs will therefore be required for plots where more than 600 mm of made ground is present.

Further investigation into the ground conditions in the southern portion of the site, if this portion of the site is to be developed. Gas monitoring may be required if made ground over 2.0 m deep is to remain beneath housing. If ground gases were found, appropriate gas precautions would have to be adopted.

Further chromium and benzo(a)pyrene testing is required around TP14.

Yours sincerely



J M Wood

Enc Exploratory Hole Location Plan, drawing reference 33662/002A

TP Logs TP14 to TP25 and SP1 to SP3

Chemtest Report 116778

Information within this drawing is not necessarily produced to scale.
Always use figured dimensions and co-ordinates – if in doubt, ask.



- KEY**
- Approximate position of trial pit excavated by Eastwood & Partners March 2011.
 - Approximate position of soakaway test carried out by Eastwood & Partners March 2011.
 - Approximate position of BGS borehole
 - Site boundary

Eastwood & Partners
CONSULTING ENGINEERS

St. Andrew's House
23 Kingfield Road
Sheffield
S11 9AS

Tel 0114 255 4554
Fax 0114 255 4330

mail@eastwoodandpartners.com
www.eastwoodandpartners.com

EOP

GLEESON DEVELOPMENTS LTD
LOWFIELD ROAD, BOLTON UPON DEARNE
SITE AND ADJACENT LAND, EXPLORATORY HOLE
LOCATION PLAN

A	First Issue.					
REV	DESCRIPTION			SIG	CHK	DATE
SCALE WHEN PLOTTED AT A3			DRAWING STATUS			
1:1250			INFORMATION			
DRAWN	CHECKED	DATE	DRAWING NUMBER		REV	
CD	KE	06-04-11	33662/002		A	

Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.20m

0.80m



Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D					TOPSOIL: Dark brown clayey sand with many roots.	
			0.60				
0.90	D					Pale brown slightly silty gravelly SAND.	1
			1.20				
Trialpit Complete at 1.20 m							2
							3
							4

Remarks:

Groundwater: None encountered.



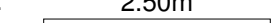
Project Name Lowfield Road	Project No. 33662	Co-ords: - Level: -	Date 23/03/2011
Location: Bolton upon Dearne		Dimensions: 2.50m Depth 1.20m 0.80m 	Scale 1:25
Client: Gleeson Developments Ltd			Logged By KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D		1.20			TOPSOIL: Dark brown clayey sand with many roots.

Remarks:

Groundwater: None encountered.



Project Name Lowfield Road	Project No. 33662	Co-ords: - Level: -	Date 23/03/2011
Location: Bolton upon Dearne		Dimensions: 2.50m Depth 1.10m	Scale 1:25
Client: Gleeson Developments Ltd			Logged By KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			1.10			TOPSOIL/MADE GROUND: Dark brown clayey sand with occasional sandstone and concrete cobbles and boulders and many roots.	

Remarks:

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Scale
 1:25

Client: Gleeson Developments Ltd

Depth
 2.20m

0.80m

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D		0.30			MADE GROUND: Well compacted grey brown sandy gravel with occasional brick cobbles and sections of rebar. Gravel is fine to coarse subangular and angular stone, hardcore, brick and concrete fragments.	
0.70	D		1.10			MADE GROUND: Orange brown gravelly sand with occasional sandstone and brick cobbles and rare sandstone boulders.	
			1.80			Orange brown clayey slightly gravelly SAND with occasional sandstone cobbles. Gravel is fine to coarse subrounded and subangular sandstone.	1
			2.20			Moderately strong yellow brown SANDSTONE.	2
Trialpit Complete at 2.20 m							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

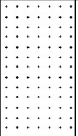
Depth
 1.20m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.05	D		0.10			MADE GROUND: Well compacted grey brown sandy gravel with occasional brick cobbles and sections of rebar. Gravel is fine to coarse subangular and angular stone, hardcore, brick and concrete fragments.	
0.50	D		0.70			Firm very sandy slightly gravelly CLAY. Gravel is fine to coarse subangular and angular sandstone.	
			1.20			Moderately strong orange brown thinly bedded SANDSTONE.	
Trialpit Complete at 1.20 m							

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.70m

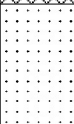
0.80m



Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.30			MADE GROUND: Loose sandstone cobbles and boulders, with rare brick cobbles.	
			0.70			Moderately strong orange brown thinly bedded SANDSTONE.	
						Trialpit Complete at 0.70 m	
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

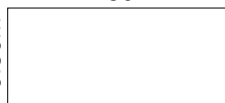
Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.30m

0.80m



Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					MADE GROUND: Loose sandstone cobbles and boulders, with rare brick cobbles.	
			0.15			Moderately strong orange brown thinly bedded SANDSTONE.	
			0.30				
Trialpit Complete at 0.30 m							
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.55m

0.80m



Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					MADE GROUND: Loose sandstone cobbles and boulders, with rare brick cobbles.	
			0.20			Moderately strong orange brown thinly bedded SANDSTONE.	
			0.55				
Trialpit Complete at 0.55 m							
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

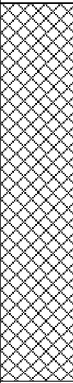
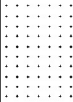
Depth
 1.60m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D					MADE GROUND: Orange brown clayey gravelly sand with occasional brick cobbles and sections of rebar. Gravel is fine to coarse subangular and angular stone, hardcore, brick and concrete fragments.	1
			1.25			Moderately strong orange brown thinly bedded SANDSTONE.	
			1.60			Trialpit Complete at 1.60 m	2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.50m

0.80m



Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D		0.20			MADE GROUND: Black ashy sandy hardcore.	
			0.40			MADE GROUND: Orange brown hardcore.	
0.80	D					Pale yellow slightly clayey slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	1
			1.30			Moderately strong yellow brown SANDSTONE.	
			1.50			Trialpit Complete at 1.50 m	2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

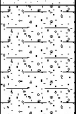
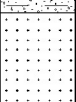
Depth
 1.50m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.50	D		0.30			MADE GROUND: Black ashy sandy hardcore with sections of rebar.	
						Stiff orange brown sandy CLAY.	
			0.80			Pale yellow slightly clayey slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	1
			1.20			Moderately strong yellow brown SANDSTONE.	
			1.50			Trialpit Complete at 1.50 m	
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.10m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D					MADE GROUND: Brown gravelly sand with occasional brick cobbles. Gravel is fine to coarse subangular hardcore, concrete and brick fragments.	
			0.30			Pale yellow slightly clayey slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	
			0.80			Moderately strong yellow brown SANDSTONE.	
			1.10				1
Trialpit Complete at 1.10 m							
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.50m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.35			Pale yellow slightly clayey slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	
			0.50			Moderately strong yellow brown SANDSTONE.	
						Trialpit Complete at 0.50 m	
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock at base.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.60m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					MADE GROUND: Orange brown sandy gravel with brick and sandstone cobbles. Gravel is fine to coarse subangular sandstone and bricks.	
			0.30			Moderately strong yellow brown SANDSTONE.	
			0.60			Trialpit Complete at 0.60 m	
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock at base.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 0.40m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10			0.10			MADE GROUND: Tarmac.	
0.20			0.20			MADE GROUND: Pale grey hardcore.	
0.40			0.40			Moderately strong yellow brown SANDSTONE.	
Trialpit Complete at 0.40 m							
							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

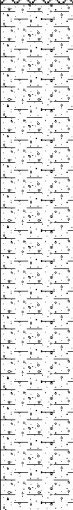
Scale
 1:25

Client: Gleeson Developments Ltd

Depth
 2.20m

0.80m

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.70	D		0.10			MADE GROUND: Tarmac.	
						MADE GROUND: Pale grey hardcore.	
			0.30			Stiff brown slightly sandy slightly gravelly CLAY with occasional sandstone cobbles. Gravel is fine to coarse subangular and angular sandstone.	
			2.00			Moderately strong yellow brown SANDSTONE.	2
			2.20			Trialpit Complete at 2.20 m	
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 2.40m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D		0.15			MADE GROUND: Dark brown gravelly sand. Gravel is fine to coarse subrounded to angular shale, ballast, brick and stone.	
						MADE GROUND: Orange hardcore.	
			0.60			Stiff brown sandy slightly gravelly CLAY. Gravel is fine to coarse subangular sandstone.	1
			1.10			Brown slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	
			2.10			Moderately strong yellow brown SANDSTONE.	2
			2.40			Trialpit Complete at 2.40 m	3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

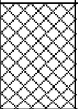
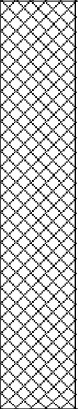
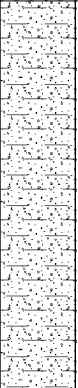
Depth
 3.00m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.35			MADE GROUND: Yellow hardcore.	
						MADE GROUND: Dark brown sandy slightly gravelly clay with rare sections of metal piping and brickwork. Gravel is fine to coarse subangular sandstone and bricks.	1
			1.70			Pale yellow slightly clayey slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	2
			3.00			Trialpit Complete at 3.00 m	3
							4

Remarks:

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 2.70m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.28			MADE GROUND: Reinforced concrete (100 mm rebar at 200 mm centres) over polythene.	
			0.55			MADE GROUND: Orange hardcore.	
			2.70			MADE GROUND: Dark brown clayey gravelly sand with brick and sandstone cobbles. Gravel is fine to coarse subangular brick and sandstone.	
Trialpit Complete at 2.70 m							

Remarks: Trial pit terminated due to strong base.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

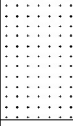
Depth
 1.20m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.30			MADE GROUND: Brown gravelly sand with occasional brick cobbles. Gravel is fine to coarse subangular hardcore, concrete and brick fragments.	
			0.80			Brown slightly gravelly SAND. Gravel is fine to coarse subangular sandstone.	
			1.20			Moderately strong yellow brown SANDSTONE.	1
Trialpit Complete at 1.20 m							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 23/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

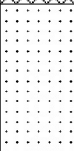
Depth
 0.80m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					MADE GROUND: Orange brown sandy gravel with brick and sandstone cobbles. Gravel is fine to coarse subangular sandstone and bricks.	
			0.30			Moderately strong yellow brown SANDSTONE.	
			0.80				
Trialpit Complete at 0.80 m							1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.00m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10						MADE GROUND: Pale grey hardcore.	
						MADE GROUND: Orange hardcore.	
0.30						Pale grey yellow gravelly SAND. Gravel is fine to coarse subangular sandstone.	
0.60						Moderately strong yellow brown SANDSTONE.	
1.00						Trialpit Complete at 1.00 m	1
							2
							3
							4

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Scale
 1:25

Client: Gleeson Developments Ltd

Depth
 2.30m

0.80m

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description				
Depth (m)	Type	Results								
0.80	D		0.30			MADE GROUND: Pale yellow hardcore.				
						Dark brown gravelly SAND. Gravel is fine to coarse subangular sandstone.				
			0.60			Pale brown gravelly SAND. Gravel is fine to coarse subangular sandstone.				
								1.70		Moderately weak becoming moderately strong yellow brown SANDSTONE.
			2.30							

Remarks: Trial pit terminated due to strong rock.

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.50m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.50			TOPSOIL: Dark brown clayey sand with many roots.	
			1.50			Pale brown gravelly SAND. Gravel is fine to coarse subangular sandstone.	1
						Trialpit Complete at 1.50 m	2
							3
							4

Remarks:

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Scale
 1:25

Client: Gleeson Developments Ltd

Depth
 2.60m

0.80m

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.50	D		0.05			TOPSOIL: Dark brown clayey sand with many roots.	1
						MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subrounded and subangular hardcore and sandstone.	
			1.60			Pale brown gravelly SAND. Gravel is fine to coarse subangular sandstone.	2
			2.40			Moderately weak becoming moderately strong yellow brown SANDSTONE.	
			2.60				3
						Trialpit Complete at 2.60 m	
							4

Remarks:

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 3.70m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

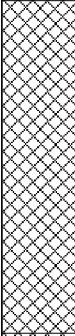
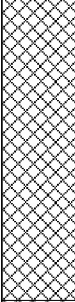
Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.20	D					TOPSOIL: Dark brown clayey sand with many roots.	
			0.50				
0.80	D					MADE GROUND: Firm orange brown mottled grey sandy slightly gravelly clay. Gravel is fine to coarse subangular sandstone and coal.	1
			1.40				
						Pale brown gravelly SAND. Gravel is fine to coarse subangular sandstone.	2
							3
			3.70				
						Trialpit Complete at 3.70 m	4

Remarks:

Groundwater: None encountered.



Project Name Lowfield Road	Project No. 33662	Co-ords: - Level: -	Date 24/03/2011
Location: Bolton upon Dearne		Dimensions: 2.50m Depth 2.40m 0.80m 	Scale 1:25
Client: Gleeson Developments Ltd			Logged By KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
			0.20			MADE GROUND: Dark grey brown clayey slightly gravelly sand with sandstone cobbles. Gravel is fine to coarse subangular sandstone and stone.	1
					MADE GROUND: Pale brown gravelly sand. Gravel is fine to coarse subrounded and subangular sandstone.		
			1.30			MADE GROUND: Firm grey sandy clay.	2
			2.30 2.40			MADE GROUND: Grey hardcore.	
						----- Trialpit Complete at 2.40 m	3
							4

Remarks:	Trial pit terminated due to possible pipe bedding.
----------	--

Groundwater: None encountered.



Project Name
 Lowfield Road

Project No.
 33662

Co-ords: -
 Level: -

Date
 24/03/2011

Location: Bolton upon Dearne

Dimensions: 2.50m

Depth
 1.10m

0.80m

Scale
 1:25

Client: Gleeson Developments Ltd

Logged By
 KE

Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.10	D					TOPSOIL: Dark brown clayey sand with many roots.	
			0.30			Firm orange brown sandy CLAY.	
			1.10			Trialpit Complete at 1.10 m	1
							2
							3
							4

Remarks: Trial pit terminated due to 225mm pipe exposed in SE corner.

Groundwater: None encountered.



Eastwood & Partners
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS

FAO Kate Edwards
01 April 2011

Dear Kate Edwards

Test Report Number 116778

Your Project Reference Land Adjacent to site, Bolton on Dearne - 33662-03

Please find enclosed the results of analysis for the samples received 28 March 2011.

All soil samples will be retained for a period of one month and all water samples will be retained for 7 days following the date of the test report. Should you require an extended retention period then please detail your requirements in an email to customerservices@chemtest.co.uk. Please be aware that charges may be applicable for extended sample storage.

If you require any further assistance, please do not hesitate to contact the Customer Services team.

Yours sincerely



Authorised Signatory

☒ Darrell Hall	Director
☐ Phil Hellier	Director
☐ Keith Jones	Technical Manager
☐ John Crawford	Quality Manager
☐ Malcolm Avis	Director



2183



Notes to accompany report:

- The sign < means 'less than'
- Tests marked 'U' hold UKAS accreditation
- Tests marked 'M' hold MCertS (and UKAS) accreditation
- Tests marked 'N' do not currently hold UKAS accreditation
- Tests marked 'S' were subcontracted to an approved laboratory
- n/e means 'not evaluated'
- i/s means 'insufficient sample'
- u/s means 'unsuitable sample'
- Comments or interpretations are outside of the scope of UKAS accreditation
- The results relate only to the items tested
- Stones represent the quantity of material removed prior to analysis
- 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
- Uncertainties of measurement for the determinands tested are available upon request
- Soil descriptions, including colour and texture, are beyond the scope of MCertS accreditation
- None of the test results included in this report have been recovery corrected

Test Report 116778 Cover Sheet

Eastwood & Partners
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS

FAO Kate Edwards
01 April 2011

Dear Kate Edwards

Test Report Number 116778

Your Project Reference Land Adjacent to site, Bolton on Dearne - 33662-03

Please find enclosed the results of analysis for the samples received 28 March 2011.

All soil samples will be retained for a period of one month and all water samples will be retained for 7 days following the date of the test report. Should you require an extended retention period then please detail your requirements in an email to customerservices@chemtest.co.uk. Please be aware that charges may be applicable for extended sample storage.

If you require any further assistance, please do not hesitate to contact the Customer Services team.

Yours sincerely



Authorised Signatory

☒ Darrell Hall	Director
☐ Phil Hellier	Director
☐ Keith Jones	Technical Manager
☐ John Crawford	Quality Manager
☐ Malcolm Avis	Director



2183



Notes to accompany report:

- The sign < means 'less than'
- Tests marked 'U' hold UKAS accreditation
- Tests marked 'M' hold MCertS (and UKAS) accreditation
- Tests marked 'N' do not currently hold UKAS accreditation
- Tests marked 'S' were subcontracted to an approved laboratory
- n/e means 'not evaluated'
- i/s means 'insufficient sample'
- u/s means 'unsuitable sample'
- Comments or interpretations are outside of the scope of UKAS accreditation
- The results relate only to the items tested
- Stones represent the quantity of material removed prior to analysis
- 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
- Uncertainties of measurement for the determinands tested are available upon request
- Soil descriptions, including colour and texture, are beyond the scope of MCertS accreditation
- None of the test results included in this report have been recovery corrected

Test Report 116778 Cover Sheet

Eastwood & Partners
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS

LABORATORY TEST REPORT



Report Date
05 April 2011

Results of analysis of 9 samples
received 28 March 2011

FAO Kate Edwards

Land Adjacent to site, Bolton on Dearne - 33662-03

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

116778												
AF89102	AF89103	AF89104	AF89105	AF89106	AF89107	AF89108	AF89109					
TP18	TP14	TP22	TP23	SP1	SP2	TP23	TP25					
25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011					
0.1m	0.1m	0.5m	0.8m	0.2m	0.2m	0.2m	0.1m					
SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL					
2175	Sulfur (total TRL report 447)		%	M	<0.01	0.21	0.010	0.06	0.02	0.02	0.13	0.03
2120	Sulfate (2:1 water soluble) as SO4	14808798	g l ⁻¹	M	0.01	0.41	<0.01	0.04	<0.01	<0.01	0.03	<0.01
2490	Chromium (hexavalent)	18540299	mg kg ⁻¹	N	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2430	Sulfate (total) by BS1377 (HCl extract)	14808798	%	M	0.05	0.74	0.02	0.10	0.05	0.03	0.08	0.04
2450	Arsenic	7440382	mg kg ⁻¹	M	6.6	13	12	28	13	8.9	23	9.9
	Cadmium	7440439	mg kg ⁻¹	M	0.23	0.71	0.23	0.47	0.33	0.25	0.66	0.26
	Chromium	7440473	mg kg ⁻¹	M	14	610	35	32	16	12	22	13
	Copper	7440508	mg kg ⁻¹	M	10	58	44	56	23	19	120	20
	Mercury	7439976	mg kg ⁻¹	M	<0.10	0.26	<0.10	<0.10	<0.10	<0.10	0.24	<0.10
	Nickel	7440020	mg kg ⁻¹	M	13	83	38	47	15	12	33	12
	Lead	7439921	mg kg ⁻¹	M	28	65	45	70	55	48	110	48
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	250	110	96	170	81	70	190	68
2800	Naphthalene	91203	mg kg ⁻¹	M	<0.1	1.2	0.2	1.1	0.3	0.2	1.2	0.3
	Acenaphthylene	208968	mg kg ⁻¹	N	<0.1	2.6	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
	Acenaphthene	83329	mg kg ⁻¹	M	<0.1	9.5	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fluorene	86737	mg kg ⁻¹	M	<0.1	9.4	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
	Phenanthrene	85018	mg kg ⁻¹	M	0.4	93	1.2	1.1	0.3	0.2	1.1	0.2
	Anthracene	120127	mg kg ⁻¹	M	<0.1	27	0.3	0.2	<0.1	<0.1	0.2	<0.1
	Fluoranthene	206440	mg kg ⁻¹	M	0.5	140	2	1.7	0.4	0.3	1.9	0.3
	Pyrene	129000	mg kg ⁻¹	M	0.3	120	1.5	1.5	0.3	0.2	1.5	0.3
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	0.1	67	0.7	0.9	<0.1	<0.1	0.8	<0.1
	Chrysene	218019	mg kg ⁻¹	M	0.1	58	0.7	0.8	0.1	<0.1	1	0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	M	0.1	48	0.6	0.8	0.1	<0.1	0.7	<0.1
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	<0.1	26	0.2	0.4	<0.1	<0.1	0.5	<0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	0.1	68	0.5	0.6	0.1	<0.1	0.8	<0.1
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	N	<0.1	12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	<0.1	35	0.2	0.4	<0.1	<0.1	0.4	<0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	<0.1	41	0.2	0.4	<0.1	<0.1	0.5	<0.1

All tests undertaken between 28-Mar-2011 and 31-Mar-2011

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page

Column page 1

Report page 1 of 2

Report sample ID range AF89102 to AF89110

Eastwood & Partners
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS

LABORATORY TEST REPORT



Report Date
05 April 2011

Results of analysis of 9 samples
received 28 March 2011

FAO Kate Edwards

Land Adjacent to site, Bolton on Dearne - 33662-03

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓	Determinand↓	CAS No↓	Units↓		
2175	Sulfur (total TRL report 447)		%	M	<0.01
2120	Sulfate (2:1 water soluble) as SO ₄	14808798	g l ⁻¹	M	<0.01
2490	Chromium (hexavalent)	18540299	mg kg ⁻¹	N	<0.5
2430	Sulfate (total) by BS1377 (HCl extract)	14808798	%	M	<0.01
2450	Arsenic	7440382	mg kg ⁻¹	M	4.9
	Cadmium	7440439	mg kg ⁻¹	M	<0.10
	Chromium	7440473	mg kg ⁻¹	M	18
	Copper	7440508	mg kg ⁻¹	M	11
	Mercury	7439976	mg kg ⁻¹	M	<0.10
	Nickel	7440020	mg kg ⁻¹	M	16
	Lead	7439921	mg kg ⁻¹	M	27
	Selenium	7782492	mg kg ⁻¹	M	<0.20
	Zinc	7440666	mg kg ⁻¹	M	53
2800	Naphthalene	91203	mg kg ⁻¹	M	<0.1
	Acenaphthylene	208968	mg kg ⁻¹	N	<0.1
	Acenaphthene	83329	mg kg ⁻¹	M	<0.1
	Fluorene	86737	mg kg ⁻¹	M	<0.1
	Phenanthrene	85018	mg kg ⁻¹	M	<0.1
	Anthracene	120127	mg kg ⁻¹	M	<0.1
	Fluoranthene	206440	mg kg ⁻¹	M	<0.1
	Pyrene	129000	mg kg ⁻¹	M	<0.1
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	<0.1
	Chrysene	218019	mg kg ⁻¹	M	<0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	M	<0.1
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	<0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	<0.1
	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	N	<0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	<0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	<0.1

All tests undertaken between 28-Mar-2011 and 31-Mar-2011

This report should be interpreted in conjunction with the notes on the accompanying cover page

Column page 2

Report page 1 of 2

Report sample ID range AF89102 to AF89110

LABORATORY TEST REPORT

Report Date
05 April 2011

Results of analysis of 9 samples
received 28 March 2011

FAO Kate Edwards

Land Adjacent to site, Bolton on Dearne - 33662-03

					116778							
					AF89102	AF89103	AF89104	AF89105	AF89106	AF89107	AF89108	AF89109
					TP18	TP14	TP22	TP23	SP1	SP2	TP23	TP25
					25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011	25/3/2011
					0.1m	0.1m	0.5m	0.8m	0.2m	0.2m	0.2m	0.1m
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2800	Total (of 16) PAHs		mg kg ⁻¹	N	<2	760	8.2	10	<2	<2	11	<2
2010	pH			M	8.0	10.5	8.0	7.6	7.3	7.2	6.5	6.7
2030	Moisture		%	n/a	16	9.6	20.9	22.3	23.1	20.1	33.2	25.4
	Stones content (>50mm)		%	n/a	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2140	Soil colour			n/a	brown	brown	brown	brown	brown	brown	brown	brown
	Soil texture			n/a	sand	sand	sand	sand	sand	sand	sand	sand
	Other material			n/a	stones	stones	stones	stones	stones	stones	stones	stones
2186	Asbestos Containing Material			U	not found	not found	not found	not found	not found	not found	not found	not found

Eastwood & Partners
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS

LABORATORY TEST REPORT



Report Date
05 April 2011

Results of analysis of 9 samples
received 28 March 2011

FAO Kate Edwards

Land Adjacent to site, Bolton on Dearne - 33662-03

					116778
					AF89110
					SP1
					25/3/2011
					0.9m
					SOIL
2800	Total (of 16) PAHs		mg kg ⁻¹	N	<2
2010	pH			M	7.3
2030	Moisture		%	n/a	19.5
	Stones content (>50mm)		%	n/a	<0.02
2140	Soil colour			n/a	brown
	Soil texture			n/a	sand
	Other material			n/a	stones
2186	Asbestos Containing Material			U	not found