

	Thickness.			Depth from Surface.		
	Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
				11	2	11
COALY blaes			5	11	3	4
grey, waxy Fireclay			6	11	3	10
hd. joint coal splinty 2' COALY blaes & blaes			4	11	4	2
hd. fakes plenty			1	6	11	5
washed away soft faky fireclay			4	13		
8" rusty waxy faky fcl. strong fakes & sandst with shreds of clayey faky est.	1					
wh. clean, thin bed. scattered traces of pyrites	2	2		15	2	
sd. white sandstone & fractured est.		5	6	16	1	6
vertical joints bedded pale grey soft lt. fakes & sandst.		2		16	3	6
clayey fakes " " "		1	9	16	5	3
grey fakes with thin bands of hd. faky est.			10	17		1
grey to dk. waer Blaes with traces of shells		1	10	17	1	11
COAL			9	17	2	8
grey & brown soft fireclay		3	4	18		
grey & dark, lippy, wottlets faky fcl. & balls		1	2	18	1	2
pale grey strong fcs. light fakes with black wottlets		2		18	3	2
white, brown Sandst. & broken est.		3	3	19		5
wh. est. Broken est. mostly ground away med. grain			5	19		10
white, vertical joints sd. broken sandst.			8	19	1	6
knagley, hd. sd. broken knagle						
thin & est. white fcs. and est. with broken thin beds						
left the waer grinding pieces, 3' ground away	1			20	1	6
strong grey sd. Sandst. & broken est.		1	7	20	3	1
faky Broken fakes			7	20	4	8
sd. strong Blaes & broken blaes, greasy fcs. ribs		3	9	21	2	5
sd. white Lt. and dk. blaes & spar with traces of shells		1	1	21	2	6
COAL			8	21	4	2
strong, black, waxy Dark fakes			4 1/2	21	4	6 1/2
COAL			10 1/2	21	5	5
black waxy soft dark fakes			2	21	5	7
grey, sh. dark wottlets soft fcl.			3	21	5	10
waxy faky fcl. w. sh. waer bedded thin, long fakes			1	22		10
clayey, grey, faky, est. Ex. hd. est. fakes		5	8	23		6
hd. grey mica. faky " sandstone			7	23	1	1
thin beds (fractured) hd. faky "		1	8	23	2	9
planes faky "			4	24		11

SECTION OF **No. 4 Borehole** **NS 89 SE 70**
 Six-inch Map (County and Quarter Sheet) **Perth & Blackmarnan 139 N.E.**

(8228) W/ 2054-95 5000 117 Ltd 4 99

	Thickness			Depth from Surface		
	Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
				24		11
strong, yellow, compact knighly sat. consist. character Knigh sandstone	2	7		24	3	6
grey, vert. joints fractured as above.			9	24	4	3
strong hd. yellowish knighly sat. Ex. hd.	1	6		24	5	9
planes of movement at base bedded grey blaes with thin brown ironst. ribs & balls	3	8		25	3	5
greasy blaes w. iron ribs & balls			9	25	4	2
COAL						
Broken COALY blaes			3	25	4	5
COAL						
Soft fireclay			1	25	5	2
black, bedded, sh. broken clayey blaes coaly plant stems			4	25	5	6
Strong dark blaes			4	25	5	10
COALY blaes			2	26		
Strong dark blaes			10	26		10
grey faky. { ft. black rootlets			2	26	2	10
Strong lt. greasy faky blaes						
grey faky. { small ironst. with balls, balls			9	26	3	4
grey faky. { ft. black rootlets			1	26	4	11
Strong lt. greasy faky blaes						
grey faky. { small ironst. with balls, balls			1	26	4	11
grey faky. { small ironst. with balls, balls			1	27		3
clayey fky. sat. with small bedded joints			1	27		3
Sandstone & broken sat.						
clayey fky. sat. grey with one or two bands of grey fky.			2	27	3	
Ex. hd. sat. & faky bands						
clayey mass. fky. sat. with thin blaes of grey fakes			1	27	4	7
hd. sandstone & fakes						
grey blaes with plant debris at base			3	27	4	10
Strong greasy blaes						
COAL						
COAL						
Soft fireclay			5	28		7
Strong						
brownish grey fky. black rootlets			5	28		1
Strong						
rooty fky. sat. with rounded ironst. balls			6	28	1	6
fakes & iron. balls						
faky. rootlets joints			2	28	1	8
Split sandst. rib						
wrong balls or patches in top			2	28	1	10
Broken sandst. & balls						
grey faky. Ex. hd. sandstone			5	28	2	3
grey faky. micar. dark planes than beds.			2	28	5	2
Faky						
grey fky. sat. dark planes broken,						
broken,						
light sandst. strong, knighly med. Ex. hd.			2	29	2	8
Strong						
faky top / bedded greasy blaes with plant frags. in middle / grey fky. at base			2	29	4	10
Strong lt. greasy fky. blaes						
strong, jointed light knighly sat. Ex. hd. sat. with chaly. scales			2	30	1	4
Strong						
grey fakes with plant stems & bedded grey blaes and fky. blaes with plant stems.			1	31	1	5
Strong lt. greasy fky. blaes						
bedded grey blaes w. iron ribs & fky. blaes with plant debris			8	31	2	1

Borehole Log NS89SE70

Depth from Surface

	Thickness.			Depth from Surface.		
	Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
<i>fine black, blaes w. carbonaceous, one species Phragmites</i> (mussel band superior) Strong dark blaes			4	31	2	1
<i>thin ht straty blaes as blaes w. Naradella</i>			4	31	2	8
<i>hd. w. blaes ribs</i> COAL Y blaes			4	31	3	
<i>grey lpy</i> Soft fireclay			5	31	3	5
<i>rooty flk. fol.</i> Strong flk. & balls			7	31	4	
<i>flk. Hd.</i> faky sandstone			3	31	4	3
<i>knighly, grey, jointed, hd. broken est.</i>			7	31	4	10
Hard sandstone			2	31	5	
<i>bedded flk. est. with plain of</i>						
<i>dk. flk. / grey flk. 8" / grey</i>						
<i>blaes w. iron. ribs 8"</i> Hd. flk. est. & flakes	1	1	6	33		6
<i>grey flk. 1' / flk. est. 6"</i>						
<i>soft grey blaes</i> soft fireclay			2	33		8
COAL, very soft			1 2	33	1	10
<i>only moist. balls obtained</i>						
<i>perhaps (washed away</i> Soft flk. & balls			1 9	33	3	7
<i>small fault</i>						
<i>horiz</i> irony clayey Ex. hd. sandstone			2	33	3	9
<i>not seen (washed away)</i> soft sandy flakes			2 8	34		5
<i>white clean rock, musci. layers. red. sd.</i> Sandstone & broken sandst.			5 3	34	5	8
<i>white clean. medium gr. hard. etc</i> Strong sandstone			3	36		
<i>white clean bedded pyrites in veins some soft parts, plant stems coal. near base</i> Sandst. mostly washed away	2	4		38	4	
<i>Soft dk. flk. washed away</i>	2	1 8		40	5	8
<i>Soft dk. flk. washed away</i>			6	41		2
<i>pel. grey joint. rib. pale + brown</i> Blaes & iron ribs			1	41	1	2
<i>blaes w. Carbonaceous 2" plant frags. + rhynchon.</i>						
<i>strong, black, carbonac. flk. w. fish scales (Phragdipn)</i> Dark flakes			3	41	1	7
<i>canal coal in ribs. with dk. blaes. & pa. porous. & fish frags.</i> Strong dk. blaes			8	41	2	3
<i>black sooty joint. with Carbon. of Naradella</i> Very " "			5 1/2	41	2	8 1/2
<i>brown cp. 1. with Naradella sp.</i> Hard irony rib			1 1/2	41	2	10
<i>bedded black / 3" hd. of flk. / paroty blaes / grey coal. conchoid fract.</i> Blaes & coaly blaes			9	41	3	7
COAL, dirty			1 3	41	4	10
<i>lt. grey, blk. rootlets</i> faky fol.			1 2	42		
<i>faky flk. rooty top, bedded lower pt. with small moist balls</i> Flk. flakes & balls.	1		3	43		3
			<u>43</u>		<u>0</u>	<u>3</u>

(1090) Wt 13400-3 1000 2/21 M & G
(2002) Wt 60-7 1000 4/21

NS 89 SE

46

SECTION OF

N^o 1 Coal, Bowhouse Farm, Alloa

for Alloa Coal Co.

DRAWN.

Surface Level

O.D.

Communicated 12.3.23 by McReath & Stinson

Date of boring or sinking 1877 Borer

One-inch Map 39 Six-inch Map (County and Half-Quarter Sheet) Perth & Black. 139 N.E.

	Thickness.			Depth from Surface.		
	Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
Surface clay & sand	—	3	—	—	3	—
Mud	3	3	—	4	—	—
Sand & clay	4	3	—	8	3	—
" & gravel	—	5	—	9	2	—
Broken Metals	—	2	—	9	4	—
Grey Fakes	—	2	3	10	—	3
Sst. hard	—	1	9	10	2	—
Grey Fakes	—	3	—	10	5	—
F.C.	—	2	6	11	1	6
Coal	—	—	10	11	2	4
Fakes	—	—	7	11	2	11
Sst. hard	—	—	8	11	3	7
Fakes	—	3	—	12	—	7
F.C. & balls	—	1	8	12	2	3
Coal. Parrot	—	—	6	12	2	9
Coal (9 feet)	1	1	4	13	4	1
F.C. lumpy	—	—	2	13	4	3
"	—	—	5	13	4	8
Sst. light	4	1	6	18	—	2
Blaes	—	1	4	18	1	6
Coal	—	—	3	18	1	9
F.C. & coal.	—	—	7	18	2	4
Sst. light	—	3	—	18	5	4
" " hard	—	4	3	19	3	7
" " softer	9	2	6	29	—	1
" Red	1	3	—	30	3	1
" " hard	—	2	6	30	5	7
F.C.	—	—	8	31	—	3



British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 852218 : BGS Reference: NS89SE207

British National Grid (27700) : 289070,691910

Report an issue with this borehole

SECTION OF		BOWHOUSE B/H 4	REG. NO.	NS89SE 207
		ALLOA		
NAT. GRID REF.		89079191		
SURFACE LEVEL		?*OD		
LOGGED BY		KVD.05/02/86		
DRILLED FOR		ROS.		
DRILLED BY		POL.28/01/86		
WATER STRUCK U N S E S I C			THICK.	DEPTH.
SOIL.NOCO.			0.50	0.50
CLAY,SLTY,NOCO.			1.00	1.50
CLAY.PLASTIC,NOCO.			5.90	7.40
SAGR.NOCO.			1.80	9.20
CLAY,SLTY+GRAV.UC.NOCO.			7.40	16.60
SDST.NOCO.			0.50	17.10
SDST.off white/grey,rila,v silty.			1.20	18.30
SLST.blue/grey,thinly lamd.			1.60	19.90
SDST.off white/buff,fine,silty,rila.			2.85	22.75
SLST.off white/buff.			0.70	23.45
MDST.dk grey,CARB,SHELLS.			0.29	23.74
COAL.CANNEL TOP,bkn,to dust from 25.5m.			3.00	26.74
SEAT.sand.core loss.			1.71	28.45
SDST.buff,fine,rila,bkn to base.			0.89	29.34
END OF BOREHOLE 29.34m				



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 852219 : BGS Reference: NS89SE208

British National Grid (27700) : 289080,691890

Report an issue with this borehole



< Prev

Page 1 of 2 ▾

Next >



SECTION OF		REG. NO.
ROWHOUSE B/H 10		NS89SE 208
ALLOA		
NAT. GRID REF.		89089189
SURFACE LEVEL		?*OD
LOGGED BY		KVD.07/02/86
DRILLED FOR		ROS.
DRILLED BY		POL.05/02/86
WATER STRUCK		U N S E S I C
		THICK. DEPTH.
SOIL.NOCO.		0.50 0.50
CLAY,SLTY.NOCO.		1.00 1.50
CLAY.PLASTIC.NOCO.		6.00 7.50
GRAV.UC.CLAYEY.NOCO.		10.50 18.00
SDST,SLST.off white/grey,rila,COALY traces to top,v bkn.		2.20 20.20
SLMD.grey,thinly bedded,silty bands.		1.50 21.70
MDST.black thinly bedded,SHELLS.		0.30 22.00
MDST,SLST.grey,thinly bedded,bkn.		0.60 22.60
SDST.off white/grey,finely rila,v silty.		3.58 26.18
MDST.black,SHELLS.		0.37 26.55
CANL.		0.21 26.76
VOID.		2.00 28.76
COAL.bright banded.		0.32 29.08
SEAT.grey,slst,sandy to base.		1.07 30.15
SDST.off white/buff,fine.		0.55 30.70
END OF BOREHOLE 30.70m		

Appendix 06
Coal Authority Report
(February 2017, Ref: 51001370839001)



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

SITE AT ALLOA
CLACKMANNANSHIRE

Date of enquiry: 17 February 2017
Date enquiry received: 17 February 2017
Issue date: 17 February 2017

Our reference: 51001370839001
Your reference: 114797357_2|



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

SITE AT ALLOA, CLACKMANNANSHIRE


How to contact us


0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

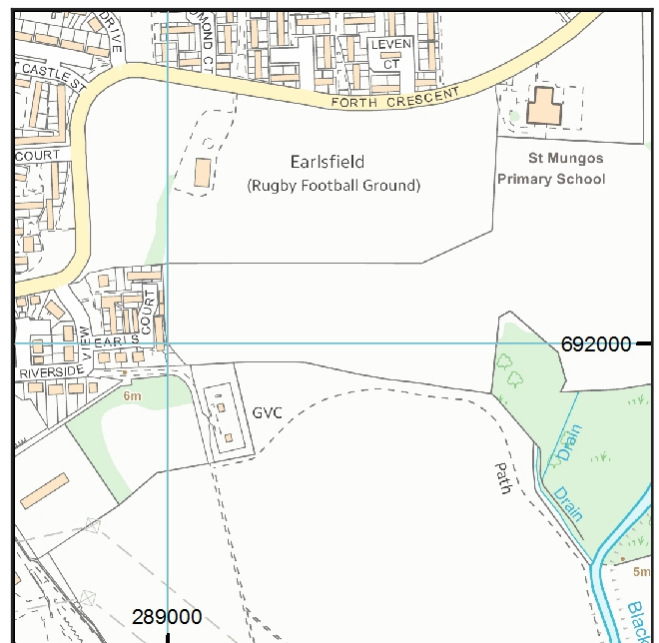
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	Yes
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No

Further recommended reports
Coal mining subsidence claims 50m buffer report
Coal mining subsidence claims history

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 2 seams of coal at 120m depth, and last worked in 1953.

Any movement in the ground due to coal mining activity should have stopped.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

There are 1 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

If further subsidence damage claims information is required, please visit www.groundstability.com.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Comments on the Coal Authority information

The Coal Authority own the copyright in this report and the information used is protected by our database right.

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

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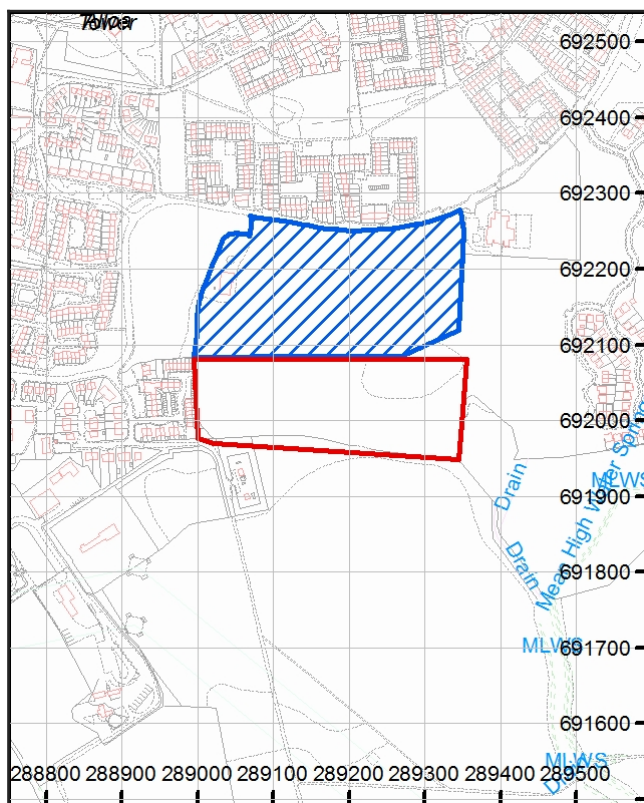
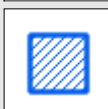
Enquiry boundary

Key

Approximate position of enquiry boundary shown



Coal claims




How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
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 /company/the-coal-authority

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Appendix 07

**Records of Exploratory Trial Pit Logs
(Mason Evans Partnership Ltd, August 2017)**



Geo-Environmental Consultants
t: 0141 420 2025 e: masonevans.co.uk

The Piazza, 95 Morrison Street, Glasgow, G5 8BE

Site
Alloa Phase 8+9

Trial Pit No
SP01

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.2m

Ground Level

Date
17-08-17
17-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
1.00	TJSuite 1 1.0				(2.20)	Made Ground: Dark brown slightly gravelly very sandy CLAY with occasional rootlets and occasional angular to rounded sandstone cobbles. Gravel is angular to rounded fine to coarse sandstone and siltstone. Extraneous material includes rubber gloves, brick fragments, porcelain fragments, rubber and wire.	
2.00	TJENV 2.0				2.20		

Remarks

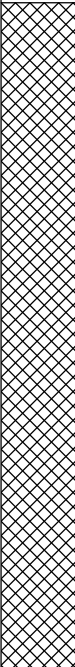
- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.20 m.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

Logged By
AD

Site Alloa Phase 8+9		Trial Pit No SP02	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.2m	Ground Level	Date 17-08-17 17-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.50	TJENV 0.5					Made Ground: Dark brown slightly gravelly very sandy CLAY with occasional rootlets and occasional angular to rounded sandstone cobbles. Gravel is angular to rounded fine to coarse sandstone and siltstone. Extraneous material includes rubber gloves, brick fragments, porcelain fragments, rubber and wire.	
1.50	TJSuite 2 1.5			(2.20)			
					2.20		

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.20 m.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

Logged By
 AD



Geo-Environmental Consultants
 t: 0141 420 2025 e: masonevans.co.uk
 The Piazza, 95 Morrison Street, Glasgow, G5 8BE

Site
 Alloa Phase 8+9

Trial Pit No
SP03

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.2m

Ground Level

Date
 17-08-17
 17-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.50	TJSuite 1 0.5					Made Ground: Dark brown slightly gravelly very sandy CLAY with occasional rootlets and occasional angular to rounded sandstone cobbles. Gravel is angular to rounded fine to coarse sandstone and siltstone. Extraneous material includes plastic bags, rubber gloves, brick fragments, concrete, porcelain fragments, rubber and wire.	
1.50	TJENV 1.5			(2.00)			
					2.00		

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.20 m.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

Logged By
 AD



Geo-Environmental Consultants
 t: 0141 420 2025 e: masonevans.co.uk
 The Piazza, 95 Morrison Street, Glasgow, G5 8BE

Site
 Alloa Phase 8+9

Trial Pit No
TP01

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.7m

Ground Level

Date
 17-08-17
 17-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
					(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.40	TJUKWIR 0.4				(0.30) 0.60	Firm light brown slightly sandy CLAY with occasional rootlets.	
0.60	TJENV 0.6				(0.40) 1.00	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.70) 1.70	Soft light brown mottled orange silty CLAY.	
1.90	TJENV 1.9				(1.00) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site Alloa Phase 8+9		Trial Pit No TP02	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.7m	Ground Level	Date 17-08-17 17-08-17
Contractor SKF Drilling LTD		Sheet 1 of 1	

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.30 0.70	TJSuite 1 0.3				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.30) 0.60	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
				(1.30) 1.90	Soft light brown mottled orange silty CLAY.		
				(0.80) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.		

Remarks 1. Strength and density characteristics assessed by visual inspection by the on site engineer only. 2. Pit was terminated at 2.70 m. 3. Slight water seepage recorded at base of trial pit. 4. Pit side walls were stable.	Plan



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Site Alloa Phase 8+9		Trial Pit No TP03	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.7m	Ground Level	Date 17-08-17 17-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
1.70	TJENV 1.7				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.60) 0.90	Stiff light brown slightly sandy CLAY with occasional rootlets.	
					(0.70) 1.60	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(1.10) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and organic plant material.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
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Site Alloa Phase 8+9		Trial Pit No TP04	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.85m	Ground Level	Date 17-08-17 17-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJTopsoil (re-use)	0.2			0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.60	TJENV	0.6			1.25	Firm light brown slightly sandy CLAY with occasional rootlets.	
					2.10	Soft light brown mottled orange silty CLAY with occasional rootlets.	
					2.85	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks 1. Strength and density characteristics assessed by visual inspection by the on site engineer only. 2. Pit was terminated at 2.85 m. 3. Slight water seepage recorded at base of trial pit. 4. Pit side walls were stable.	Plan
	All dimensions in metres Scale 1:25



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Site Alloa Phase 8+9		Trial Pit No TP05	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.7m	Ground Level	Date 17-08-17 17-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.40	TJUKWIR 0.4				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.20) 0.50	Stiff light brown slightly sandy CLAY with occasional rootlets.	
					(0.90) 1.40	Firm reddish brown slightly sandy CLAY with occasional rootlets.	
					(0.40) 1.80	Soft light brown mottled orange slightly sandy silty CLAY.	
1.90	TJENV 1.9				(0.90) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site
 Alloa Phase 8+9

Trial Pit No
TP06

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.7m

Ground Level

Date
 17-08-17
 17-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJSuite 1 0.2				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.60) 0.90	Stiff light brown slightly sandy CLAY with occasional rootlets.	
0.80	TJENV 0.8				(0.20) 1.10	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.50) 1.60	Soft light brown mottled orange silty CLAY.	
					(1.10) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP07

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.25m

Ground Level

Date
17-08-17
17-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
					(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.40	TJENV 0.4				(0.20) 0.50	Stiff light brown slightly sandy CLAY with occasional rootlets	
0.60	TJENV 0.6				(0.20) 0.70	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.50) 1.20	Soft light brown mottled orange silty CLAY. 0.90 4-inch ceramic field drain	
					(1.05) 2.25	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.25m due to impersistent water ingress from old field drain.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
 Alloa Phase 8+9

Trial Pit No
TP08

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.7m

Ground Level

Date
 18-08-17
 18-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.30	TJSuite 1 0.3				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.20) 0.50	Stiff light brown slightly sandy CLAY with occasional rootlets.	
1.50	TJENV 1.5				(0.90) 1.40	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.60) 2.00	Soft light brown mottled orange silty CLAY.	
					(0.70) 2.70	Very soft bluish grey slightly gravelly slightly sandy clayey SILT with occasional shell fragment and rootlets. Gravel is sub-angular to angular coarse sandstone.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site
 Alloa Phase 8+9

Trial Pit No
TP09

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.2m

Ground Level

Date
 18-08-17
 18-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.30	ENV 0.3				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.40) 0.70	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.30) 1.00	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.20) 1.20	Soft light brown mottled orange silty CLAY.	
1.50	Suite 2 1.5				(1.50) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site Alloa Phase 8+9		Trial Pit No TP10	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.2m	Ground Level	Date 18-08-17 18-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.30	ENV 0.3				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.40) 0.70	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
	(0.30) 1.00			Firm light brown slightly sandy CLAY with occasional rootlets.			
	(0.20) 1.20			Soft light brown mottled orange silty CLAY. 1.10 4-inch ceramic field drain			
1.20	ENV 1.2				(1.00) 2.20	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments up to 60mm and rootlets.	

Remarks 1. Strength and density characteristics assessed by visual inspection by the on site engineer only. 2. Pit was terminated at 2.20 m due to impersistent water ingress from old field drain. 3. Pit side walls were stable.	Plan
	All dimensions in metres Scale 1:25

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Site
 Alloa Phase 8+9

Trial Pit No
TP11

Client
 Allanwater Developments

Job No
 P16-483

Excavation Method
 Volvo EC27

Trial Pit Dimensions
 2.0m x 0.3m x 2.7m

Ground Level

Date
 18-08-17
 18-08-17

Sheet
 1 of 1

Contractor
 SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJSuite 1 0.2				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.55) 0.85	Stiff light brown slightly sandy CLAY with occasional rootlets.	
0.90	TJENV 0.9				(0.25) 1.10	Firm light brown slightly sandy CLAY with occasional rootlets.	
1.20	TJENV 1.2				(0.60) 1.70	Soft light brown mottled orange silty CLAY.	
					(1.00) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

1. Strength and density characteristics assessed by visual inspection by the on site engineer only.
2. Pit was terminated at 2.70 m.
3. Slight water seepage recorded at base of trial pit.
4. Pit side walls were stable.

Plan

All dimensions in metres
 Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP12

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.40	TJSuite 1 0.4				0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					0.80	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					1.20	Firm light brown slightly sandy CLAY with occasional rootlets.	
					1.60	Soft light brown mottled orange slightly sandy silty CLAY.	
1.60	TJENV 1.6				2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP13

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level
Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.50	TJENV 0.5				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.40) 0.70	Stiff light brown slightly sandy CLAY with occasional rootlets.	
					(0.35) 1.05	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.35) 1.40	Soft light brown mottled orange silty CLAY.	
1.40	TJSuite 2 1.4				(1.30) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP14

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.40	TJENV 0.4				(0.30)	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					0.30		
					(0.30)	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					0.60		
1.60	TJENV 1.6				(0.30)	Firm light brown slightly sandy CLAY with occasional rootlets.	
					0.90		
					(0.50)	Soft light brown mottled orange silty CLAY. 0.90 4-inch ceramic field drain	
					1.40		
					(0.80)	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	
					2.20		

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.20 m due to impersistent water ingress from old field drain.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP15

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJSuite 1 0.2				0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					0.80	Stiff light brown slightly sandy CLAY with occasional rootlets.	
0.90	TJENV 0.9				1.10	Firm light brown slightly sandy CLAY with occasional rootlets.	
1.30	TJENV 1.3				1.40	Soft light brown mottled orange slightly sandy silty CLAY.	
					2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP16

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJENV 0.2				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.60	TJENV 0.6				(0.40) 0.70	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.30) 1.00	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.60) 1.60	Soft light brown mottled orange slightly sandy silty CLAY.	
1.70	TJENV 1.7				(1.10) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

1. Strength and density characteristics assessed by visual inspection by the on site engineer only.
2. Pit was terminated at 2.70 m.
3. Slight water seepage recorded at base of trial pit.
4. Pit side walls were stable.

Plan

All dimensions in metres
Scale 1:25

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Site
Alloa Phase 8+9

Trial Pit No
TP17

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.50	TJENV 0.5				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					(0.50) 0.80	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.40) 1.20	Firm light brown slightly sandy CLAY with occasional rootlets.	
1.50	TJENV 1.5				(0.30) 1.50	Soft light brown mottled orange slightly sandy silty CLAY.	
					(1.20) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks

- Strength and density characteristics assessed by visual inspection by the on site engineer only.
- Pit was terminated at 2.70 m.
- Slight water seepage recorded at base of trial pit.
- Pit side walls were stable.

Plan

All dimensions in metres
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Site
Alloa Phase 8+9

Trial Pit No
TP18

Client
Allanwater Developments

Job No
P16-483

Excavation Method
Volvo EC27

Trial Pit Dimensions
2.0m x 0.3m x 2.7m

Ground Level

Date
18-08-17
18-08-17

Sheet
1 of 1

Contractor
SKF Drilling LTD

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.50 1.00	TJENV 0.5				(0.30)	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
					0.30		
	(0.30)				Stiff light brown slightly sandy CLAY with occasional rootlets.		
	0.60						
	(0.30)				Firm light brown slightly sandy CLAY with occasional rootlets.		
		0.90					
	TJSuite 2 1.0			(0.70)	Soft light brown mottled orange slightly sandy silty CLAY.		
				1.60			
				(1.10)	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.		
				2.70			

Remarks

1. Strength and density characteristics assessed by visual inspection by the on site engineer only.
2. Pit was terminated at 2.70 m.
3. Pit side walls were stable.

Plan

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Site Alloa Phase 8+9		Trial Pit No TP19	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.7m	Ground Level	Date 18-08-17 18-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJTopsoil (re-use)	0.2			(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.50	TJENV	0.5			(0.30) 0.60	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.60) 1.20	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.40) 1.60	Soft light brown mottled orange slightly sandy silty CLAY.	
					(1.10) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks 1. Strength and density characteristics assessed by visual inspection by the on site engineer only. 2. Pit was terminated at 2.70 m. 3. Slight water seepage recorded at base of trial pit. 4. Pit side walls were stable.	Plan
	All dimensions in metres Scale 1:25



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Site Alloa Phase 8+9		Trial Pit No TP20	
Client Allanwater Developments		Job No P16-483	
Excavation Method Volvo EC27	Trial Pit Dimensions 2.0m x 0.3m x 2.7m	Ground Level	Date 18-08-17 18-08-17
Contractor SKF Drilling LTD			Sheet 1 of 1

Depth	Sample/Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	DESCRIPTION	Legend
0.20	TJSuite 1 0.2				(0.30) 0.30	Topsoil: Brown slightly sandy silty CLAY with occasional rootlets.	
0.60	TJENV 0.6				(0.30) 0.60	Stiff light brown slightly sandy CLAY with occasional rootlets and rare black decomposed organics.	
					(0.30) 0.90	Firm light brown slightly sandy CLAY with occasional rootlets.	
					(0.80) 1.70	Soft light brown mottled orange slightly sandy silty CLAY.	
					(1.00) 2.70	Very soft bluish grey slightly sandy clayey SILT with occasional shell fragments and rootlets.	

Remarks 1. Strength and density characteristics assessed by visual inspection by the on site engineer only. 2. Pit was terminated at 2.70 m. 3. Slight water seepage recorded at base of trial pit. 4. Pit side walls were stable.	Plan
	All dimensions in metres Scale 1:25

Appendix 8

**Records of Exploratory Soil/Rotary/Mineral Bore Hole Logs
(SKF Drilling Ltd & Phoenix Drilling Ltd, August 2017)**



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH01

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.30		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Traces of roots at top.				DJ 0.50		
				DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	0,0,1,0,1,0	
		1.50				
Very soft light grey slightly sandy SILT.				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,1,0,1,1,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0,0	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,1,0,1,1	
				D 5.00 SPT 5.00-5.45 U66 5.00-6.00	0,0,0,0,1,0	
		6.50				
				D 6.00 SPT 6.00-6.45 U66 6.00-7.00	0,1,0,1,1,1	
Stiff grey very sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. Occasional pockets of clayey sand.				D 7.00 SPT 7.00-7.45	8,9,10,11,10,11	
				SPT 7.50-7.95	10,11,12,12,13,12	
		8.00				

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 3.00 Final Depth: 8.00		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: LS		Checked by: SKF		



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH02

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.25		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Traces of roots at top.				DJ 0.50		
Very soft light grey slightly sandy SILT.		0.95		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	0,0,0,0,1,0	
				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0,0	
Firm to stiff grey very sandy gravelly CLAY with occasional cobbles and traces of shell at top. Gravel fine to coarse and angular to sub rounded. Locally very clayey sand and gravel.		5.50		D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,1,0,1,0	
				D 5.00 SPT 5.00-5.45 U66 5.00-6.00	0,0,0,0,0,1	
Stiff grey sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded.		6.65		D 6.00 SPT 6.00-6.45	2,3,4,5,6,7	
				SPT 6.50-6.95	8,9,10,11,12,14	
				SPT 7.00-7.45	14,15,13,14,18,15	
				SPT 7.50-7.95	14,12,12,15,15,15	
		8.00				

Water Strikes	Details	SYMBOLS KEY
Strike: 3.00 Flow: FAST	Casing: 3.00 Final Depth: 8.00	B - BULK U - UNDISTURBED D - SMALL DISTURBED J - JAR V - VIAL W - WATER NR - NO RECOVERY * - ESTIMATED DENSITY HV - HAND VANE ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:		
Logged by: LS	Checked by: SKF	



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH03

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.25		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Occasional roots at top.		0.80		DJ 0.50		
Very soft light grey slightly sandy SILT.		5.30		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	0,0,0,0,0	
				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,0,1,0,1	
Stiff grey sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. At 7.80m hard obstruction, possible bedrock or boulder.		7.80		D 5.00 SPT 5.00-5.45 U66 5.00-6.00	0,1,0,1,3,4	
				D 6.00 SPT 6.00-6.45	5,9,6,6,7,8	
				SPT 6.50-6.95	7,9,9,10,13,13	
				SPT 7.00-7.45	13,12,13,13,11,12	
				SPT 7.50-7.80	13,15,30,80/75mm	

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 4.00 Final Depth: 7.80		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: LS		Checked by: SKF		



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH04

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.25		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Traces of roots at top.				DJ 0.50		
		1.20		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	1,0,1,0,1,0	
Very soft light grey and light brown slightly sandy SILT.				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,1,0	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,0,1,0,0	
		5.10		D 5.00 SPT 5.00-5.45 U66 5.00-6.00	1,2,4,6,7,7	
Stiff grey sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded.				D 6.00 SPT 6.00-6.45	9,8,9,8,7,8	
				SPT 6.50-6.95	8,7,6,7,9,19	
				SPT 7.00-7.45	14,15,13,12,13,13	
		8.00		SPT 7.50-7.95	12,11,13,13,14,13	

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 4.00 Final Depth: 8.00		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: LS		Checked by: SKF		



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH05

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.30		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Traces of roots at top.				DJ 0.50		
Very soft light grey slightly sandy SILT.		1.05		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	0,0,0,0,1,0	
				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,1,0,0,1	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0,0	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,1,0,0,0	
				D 5.00 SPT 5.00-5.45 U66 5.00-6.00	0,1,0,1,0,1	
		6.70		D 6.00 SPT 6.00-6.45 U66 6.00-7.00	0,0,0,0,1,1	
Medium dense light grey and white very clayey SAND and GRAVEL. Many shells. Gravel fine to coarse and angular to sub angular.		7.15		D 7.00 SPT 7.00-7.45	1,2,17,12,7,6	
Firm to stiff grey very sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. Occasional pockets of fine to coarse sand.		8.00		SPT 7.50-7.95	5,4,5,6,6,6	

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 3.00 Final Depth: 8.00		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: LS		Checked by: SKF		



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 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH06

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.30		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Occasional roots at top.		0.95		DJ 0.50		
Very soft light grey slightly sandy SILT.		5.80		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	0,0,1,0,1,0	
				D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,1,0,1	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,0,0,0,1	
Firm to stiff grey very sandy gravelly CLAY with occasional cobbles and traces of shell at top. Gravel fine to coarse and angular to sub rounded. Occasional pockets of fine to coarse sand.		6.20		D 6.00 SPT 6.00-6.45	10,9,13,36,24,34	
Recovered as light grey and white sandy fine to coarse angular gravel of SANDSTONE. Presumed bedrock or boulder.		7.00		SPT 6.50-6.95	44,21,18,20,26,29	

Water Strikes Strike: 2.80 Flow: FAST		Details Casing: 3.00 Final Depth: 7.00		SYMBOLS KEY	
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER	
Logged by: LS		Checked by: SKF		ALL DIMENSIONS ARE IN METRES	



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH07

Contract: **ALLOA PHASE 8&9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass [GL-0.25].		0.25		DJ 0.20		
Soft light brown and orange brown very silty sandy CLAY. Occasional roots at top. Locally very soft at depth.		1.70		DJ 0.50		
				DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	1,1,0,1,0,1	
Very soft light grey and light brown slightly sandy SILT.		5.60		D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,0,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,1,0,0,1	
				D 4.00 SPT 4.00-4.45 U78 4.00-5.00	0,0,0,0,0,0	
				D 5.00 SPT 5.00-5.45 U66 5.00-6.00	0,1,0,1,0,1	
Stiff grey sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. Locally very sandy at top.		8.00		D 6.00 SPT 6.00-6.45	5,6,8,9,11,11	
				SPT 6.50-6.95	11,11,12,15,17,16	
				SPT 7.00-7.45	14,13,11,11,14,17	
				SPT 7.50-7.95	18,20,24,19,12,17	

Water Strikes Strike: 2.70 Flow: FAST	Details Casing: 3.00 Final Depth: 8.00	SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:		
Logged by: LS	Checked by: SKF	



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH08

Contract: **ALLOA PHASE 8 & 9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Topsoil / long rough grass. [GL-0.25]		0.25		DJ 0.20		
Soft light brown, orange brown and grey silty sandy CLAY. Occasional roots at top.		2.30		DJ 0.50		
				DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	1,0,1,0,1,0	
Very soft grey slightly sandy SILT. Traces of gravel. Gravel fine to coarse and angular to sub rounded. Locally soft at base.		6.00		D 2.00 SPT 2.00-2.45 U86 2.00-3.00	1,0,1,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0,0	
				D 4.00 SPT 4.00-4.45 U86 4.00-5.00	0,0,0,0,0,1	
Soft light brown clayey SILT. Traces of gravel at top.		8.00		D 5.00 SPT 5.00-5.45 U78 5.00-6.00	0,0,1,0,1,1	
				D 6.00 SPT 6.00-6.45	5,2,2,3,4,3	
				SPT 6.50-6.95	3,4,3,3,2,3	
				SPT 7.00-7.45	2,2,2,3,2,2	
				SPT 7.50-7.95	3,3,2,3,2,3	

Water Strikes Strike: 1.70 Flow: FAST		Details Casing: 4.00 Final Depth: 8.00		SYMBOLS KEY	
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER	
Logged by: EM		Checked by: SKF		ALL DIMENSIONS ARE IN METRES	



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH09

Contract: **ALLOA PHASE 8 & 9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**

Equipment: **PREMIER BADGER**

N

Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
MADE GROUND: Soft light brown silty sandy laminated clay. Occasional small roots and grey peaty pockets.		0.80		DJ 0.20 DJ 0.50		
Soft light brown, orange brown and grey silty sandy CLAY. .		1.60		DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	1,0,1,0,1,0	
Very soft grey and orange brown clayey sandy SILT. Becoming grey at base.		5.50		D 2.00 SPT 2.00-2.45 U86 2.00-3.00	0,1,0,0,0,0	
				D 3.00 SPT 3.00-3.45 U86 3.00-4.00	0,0,0,0,0,0	
				D 4.00 SPT 4.00-4.45 U86 4.00-5.00	0,0,0,1,0,1	
				D 5.00 SPT 5.00-5.45 U86 5.00-5.50	0,0,0,0,1,1	
Recovered as medium dense becoming dense light grey and light brown sandy fine to coarse angular gravel of SANDSTONE. Presumed bedrock or boulder.		6.80		SPT 5.50-5.95	8,8,9,9,11,13	
				SPT 6.00-6.45	16,18,18,14,13,17	
				SPT 6.50-6.80	19,26,29,47	

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 4.00 Final Depth: 6.80		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: EM		Checked by: SKF		



SKF Ltd, Constablewood Estate, Brisbane Glen, Largs
 Tel: 07795 493892 Email: SKFLTD@BTINTERNET.COM

BOREHOLE NO. BH10

Contract: **ALLOA PHASE 8 & 9**

Contract No: **2838**

Status: **FINAL**

Client: **MASON EVANS PARTNERSHIP**

Boring Diameter: **115MM**

Co-ordinates **E**

Date: **18/08/2017**


Equipment: **PREMIER BADGER**

N


Description of Strata	Legend	Depth	Level	Sampling	SPT Blows U Blows Hand Vane	Pipe
Ground Surface						
Soft light brown, orange brown and grey silty sandy CLAY. Occasional roots at top.		1.60		DJ 0.20 DJ 0.50 DJ 1.00 SPT 1.00-1.45 U86 1.00-2.00	1,0,1,0,1,0	
Very soft becoming soft grey slightly sandy clayey SILT. Traces of gravel. Gravel fine to coarse and angular to sub rounded.		8.00		D 2.00 SPT 2.00-2.45 U86 2.00-3.00 D 3.00 SPT 3.00-3.45 U86 3.00-4.00 D 4.00 SPT 4.00-4.45 U86 4.00-5.00 D 5.00 SPT 5.00-5.45 U78 5.00-6.00 D 6.00 SPT 6.00-6.45 SPT 6.50-6.95 SPT 7.00-7.45 SPT 7.50-7.95	0,0,0,0,1,0 0,0,0,1,0,0 0,0,0,0,0,0 0,0,1,0,1,0 1,0,1,1,1,1 2,1,1,1,2,1 1,2,1,2,1,2 2,2,2,2,2,2	

Water Strikes Strike: 3.00 Flow: FAST		Details Casing: 4.00 Final Depth: 8.00		SYMBOLS KEY B - BULK NR - NO RECOVERY U - UNDISTURBED * - ESTIMATED DENSITY D - SMALL DISTURBED HV - HAND VANE J - JAR V - VIAL W - WATER ALL DIMENSIONS ARE IN METRES
Inspection Pit: 0.30 X 0.30 X 1.00 Breaking Out / Coring: Installation: Standpipe 50mm diameter installed to 5.00m. Notes:				
Logged by: EM		Checked by: SKF		

Printed: 01/09/2017 12:01:27 Phoenix Drilling Ltd. 2 Nairn Road, Deans Industrial Estate, Livingston, West Lothian, EH54 8AY E-mail: info@phoenixdrilling.co.uk Tel: 01506 411448

Progress	Sample Depth	Samples and Tests		Casing Depth	Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill						
		Type	Result							Symbol	Depth					
30/8 2017							# Firm - stiff grey reworked CLAY.	X								
	0.50	B, J, T					Firm light yellowish brown to greyish brown sandy silty CLAY.	X								
	1.00	J, T						X								
	1.20	U (11)						X								
	2.10	B					Soft to very soft grey slightly sandy silty CLAY.	X								
	2.70	SPT=0 0.0/0.0.0.0		2.70				X								
	3.20	B					Very soft grey slightly gravelly sandy silty SILT with oyster shell fragments, faint organic traces and sandy clayey silt bands. Gravel is elongated angular to subangular of sandstone.	X								
	4.20	SPT=0 0.0/0.0.0.0		4.20				X								
	4.70	B						X								
	5.10						Dense silty clayey medium to coarse SAND.	X								
	5.70	SPT=50 16.9/26.24.0.0		5.70				X								
	6.20	B					Dense grey silty very sandy fine to coarse GRAVEL. Gravel is flat to elongated angular to subangular of sandstone and limestone.	X								
	7.20	SPT=32 7.7/8.8.8.8		7.20			Dense silty clayey medium to coarse SAND with sandy silty clay bands.	X								
	7.60							X								
	7.70	B					Firm to stiff grey sandy gravelly silty CLAY with clayey sand bands. Gravel is flat to elongated subangular fine to medium grained of sandstone and igneous rock.	X								
	8.40							X								
	8.70	U (100)					Stiff grey slightly sandy gravelly silty CLAY. Gravel is flat to elongated subangular to subrounded fine to coarse grained of sandstone and igneous rock.	X								
	9.20	U (98)						X								
	9.70	B					Firm to stiff greyish brown sandy gravelly silty CLAY with very sandy clay bands. Gravel is flat to elongated subangular fine to medium grained of sandstone and	X								
Flush		Chiselling			Water Added		Ground-water			To Depth		Location:				
Returns	Type	To Depth	From	To	Time(hr)	From	To	Struck	Rose To	Time(mins)	Cut Off		Diam	To Depth Boring	Casing	Level:
			6.80	7.00	0.75			5.20	4.30	20						Orientation: Vertical
			8.40	8.60	0.5											
			8.80	9.00	0.5											
			15.50	15.75	1											
Remarks: # Description based on drillers records. No penetration and no recovery for U100 sample at 8.7 m depth. No penetration and no recovery for SPT sample at 15.75 m depth.						Equipment: Dando 4000			Method: Inspection Pit to 1.20m Cable Percussion to 15.75m			Borehole No: BH11				
												Contract No: 2513				
Driller MK		Originator MM		BOREHOLE RECORD Scale 1:50								Part Fig. No.				
Chk & App OG		Status Final		ALLOA PHASE 8 & 9								Sheet 1 of 2				

Printed: 01/09/2017 12:01:27 Phoenix Drilling Ltd. 2 Naim Road, Deans Industrial Estate, Livingston, West Lothian, EH54 8AY E-mail: info@phoenixdrilling.co.uk Tel: 01506 411448

Progress	Sample Depth	Samples and Tests		Casing Depth	Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
	10.70	SPT=29	5.8/8.7/7.7	10.70			igneous rock.								
	11.20	B													
	12.20	U	(79)												
	12.70	B													
	13.70	SPT=21	4.5/5.5/6.5	13.70		13.70	Stiff reddish brown laminated silty CLAY.								
	14.20	B				14.15	Stiff reddish brown to brown slightly sandy slightly gravelly to gravelly silty CLAY, Gravel is flat to elongated subangular fine to medium grained of sandstone and igneous rock.								
	15.20	U	(150)			15.40	Weak dark grey laminated MUDSTONE.								
	15.75	SPT=	25.50	15.00		15.75	END OF BOREHOLE				15.75				
Flush		Chiselling			Water Added		Ground-water				To Depth		Location: Level: - Orientation: Vertical		
Returns	Type	To Depth	From	To	Time(hr)	From	To	Struck	Rose To	Time(mins)	Cut Off	Diam		To Depth Boring	Casing
			6.80	7.00	0.75										
			8.40	8.60	0.5										
			8.80	9.00	0.5										
			15.50	15.75	1										
Remarks: # Description based on drillers records. No penetration and no recovery for U100 sample at 8.7 m depth. No penetration and no recovery for SPT sample at 15.75 m depth.						Equipment: Dando 4000			Method: Inspection Pit to 1.20m Cable Percussion to 15.75m			Borehole No: BH11			
						Contract No: 2513									
Driller MK		Originator MM		BOREHOLE RECORD Scale 1:50								 Part Fig. No. Sheet 2 of 2			
Chk & App OG		Status Final		ALLOA PHASE 8 & 9											



GB Land Engineering Limited

DAILY RETURN (Drilling)

Sheet No.		2
Date	18/08/2017	
Contract Name		Alloa
Contract No.		7196
Working Day No.		2

Hole No.	Depth	Casing	Dia	Angle	From	To	Flush	Description
R02	18.00	14.00		v	0.00	15.00		Overburden
					15.00	18.00	FWR	Sandstone

Notes:

1	18.00	14.00	Sheet Total	Crew	B,Frazer	Plant DB420
0	18.00	14.00	Previous Sheet Total			
1	36.00	28.00	Cummulative Total			

Signed By GBLE Limited *T,Teasdale* Date _____
 Signed By Client _____ Date _____

Client Copy
 Q.S. Copy
 Site Copy



GB Land Engineering Limited

**DAILY RETURN
(Drilling)**

Sheet No.		3
Date	18/08/2017	
Contract Name		Alloa
Contract No.		7196
Working Day No.		3

Hole No.	Depth	Casing	Dia	Angle	From	To	Flush	Description
R01	17.00	14.00		v	0.00	14.00		Overburden
					14.00	17.00	FWR	Sandstone
R03	35.00	14.00		v	0.00	16.00		Overburden
					16.00	35.00	FWR	Sandstone
R04	35.00	14.00		v	0.00	16.00		Overburden
					16.00	35.00	FWR	Sandstone
R07	35.00	14.00		v	0.00	16.00		Overburden
					16.00	35.00	FWR	Sandstone

Notes:							
4	122.00	56.00	Sheet Total		Crew	B,Frazer	Plant DB420
0	18.00	14.00	Previous Sheet Total				
4	140.00	70.00	Cummulative Total				

Signed By **GBLE Limited** *J.Teasdale* Date _____
Signed By **Client** _____ Date _____

Client Copy
Q.S. Copy
Site Copy

Appendix 9

**Chemical Analysis Results - Soil
(DETS Ltd, Ref: 17-08694, August 2017)**



DETS

Certificate of Analysis

Certificate Number 17-08694

05-Sep-17

Client Mason Evans Partnership
95 Morrison Street
Glasgow
G5 8BE

Our Reference 17-08694

Client Reference P16-483

Order No H OLEARY

Contract Title (P16-483) Alloa Phases 8 & 9

Description 17 Soil samples, 4 Leachate samples.

Date Received 25-Aug-17

Date Started 25-Aug-17

Date Completed 05-Sep-17

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

UKWIR Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221900	1221903
Sample ID	TP01	TP05
Depth	0.40	0.40
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/08/17	18/08/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Conductivity	DETSC 2009	1	uS/cm	330	140
pH	DETSC 2008#			7.7	7.2
Redox Potential	DETSC 2016*	-500	mV	130	120
Mineral Oil(C11-C20)	DETSC 3311	10	mg/kg	< 10	< 10
Mineral Oil(C20-C40)	DETSC 3311	10	mg/kg	< 10	< 10
Total VOCs	DETSC 3431*	0.01	mg/kg	0.03	< 0.01
BTEX + MTBE	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Total SVOCs	DETSC 3433*	0.1	mg/kg	0.1	< 0.1
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Cresols and Chlorinated Phenols	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
TICs (Ethers,Ketones,Aldehydes,Amines,Nitrobenzene)			mg/kg	None	None

Summary of Chemical Analysis Soil Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221901	1221904	1221905	1221906	1221907	1221908
Sample ID	TP02	TP06	TP07	TP08	TP09	TP11
Depth	0.30	0.20	0.60	0.30	1.50	0.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	23	36	29	24	30	34
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	14	14	14	14	9.3	23
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.2	2.9	2.3	1.7	1.8	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.1	0.1	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	37	41	43	44	31	42
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	28	26	14	19	8.1	14
Lead	DETSC 2301#	0.3	mg/kg	64	32	22	23	9.6	35
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.06	< 0.05	< 0.05	< 0.05	0.07
Nickel	DETSC 2301#	1	mg/kg	26	20	25	25	19	22
Selenium	DETSC 2301#	0.5	mg/kg	0.8	0.9	< 0.5	0.6	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	69	73	60	68	42	64
Inorganics									
pH	DETSC 2008#			6.6	6.2	6.5	6.6	6.8	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	0.8	0.5	0.3	< 0.1	0.6
Total Organic Carbon	DETSC 2002	0.1	%	4.2	4.2	2.4	2.0	1.4	3.6
Organic Matter (by calculation)	*	0.1	%	7.2	7.2	4.1	3.5	2.5	6.3
Sulphide	DETSC 2024*	10	mg/kg	52	28	24	36	24	40
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.07	0.13	0.07	0.05	0.06	0.11

Summary of Chemical Analysis

Soil Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221901	1221904	1221905	1221906	1221907	1221908
Sample ID	TP02	TP06	TP07	TP08	TP09	TP11
Depth	0.30	0.20	0.60	0.30	1.50	0.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.62
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9	< 4.9	7.4	< 4.9	< 4.9	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	7.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.5	0.7	< 0.3	< 0.3	< 0.3	0.4

Summary of Chemical Analysis

Soil Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221909	1221910	1221911	1221914	1221915	1221916
Sample ID	TP12	TP13	TP18	SP01	SP02	SP03
Depth	0.40	1.40	0.50	1.00	1.50	0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	25	32	26	24	21	20
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	17	8.7	14	10	7.3	8.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.8	2.9	1.8	1.9	2.4	1.9
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	48	37	36	35	24	37
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	7.9	9.3	8.1	11	13	16
Lead	DETSC 2301#	0.3	mg/kg	18	13	11	13	17	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	26	25	23	24	16	20
Selenium	DETSC 2301#	0.5	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	49	54	51	56	46	63
Inorganics									
pH	DETSC 2008#			6.6	6.9	7.2	7.2	7.8	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	0.2	0.2	0.2
Total Organic Carbon	DETSC 2002	0.1	%	1.2	1.9	0.7	1.8	2.0	1.5
Organic Matter (by calculation)	*	0.1	%	2.0	3.3	1.2	3.1	3.5	2.6
Sulphide	DETSC 2024*	10	mg/kg	48	52	28	20	32	36
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.05	0.11	0.02	0.08	0.06	0.05

Summary of Chemical Analysis

Soil Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221909	1221910	1221911	1221914	1221915	1221916
Sample ID	TP12	TP13	TP18	SP01	SP02	SP03
Depth	0.40	1.40	0.50	1.00	1.50	0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17	18/08/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	0.11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9	< 4.9	< 4.9	< 4.9	22	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	22	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	22	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	22	< 10
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.4	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.6	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	8.4	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	7.5	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	7.0	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.4	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.5	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.6	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	2.4	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.3	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.5	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	41	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221900	1221903
Sample ID	TP01	TP05
Depth	0.40	0.40
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/08/17	18/08/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221900	1221903
Sample ID	TP01	TP05
Depth	0.40	0.40
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/08/17	18/08/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	0.02	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221900	1221903
Sample ID	TP01	TP05
Depth	0.40	0.40
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/08/17	18/08/17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	0.1	< 0.1
Chrysene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
VOC TICs					
none (TIC)	DETSC 3431*		mg/kg	None	None

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221917	1221918	1221919	1221920
Sample ID	TP09	TP13	TP18	SP02
Depth	1.50	1.40	0.50	1.50
Other ID				
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	18/08/17	18/08/17	18/08/17	18/08/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Leachate 2:1 250g Non-WAC	DETS 036*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.51	0.36	2.3	1.3
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.05
Calcium, Dissolved	DETSC 2306	0.09	mg/l	2.1	7.0	3.3	22
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.49	< 0.25	1.1	0.52
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.9	0.5	1.0	4.6
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.43	0.11	0.59	0.14
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	1.1	3.4	0.81	5.2
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.6	< 0.5	1.3	1.7
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.31	0.33	0.53
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.1	< 1.3	2.1	1.8
Inorganics							
Hardness	DETSC 2303	0.1	mg/l	9.45	31.4	11.6	76.2
Sulphate as SO4	DETSC 2055	0.1	mg/l	7.2	20	3.3	55
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10
Phenols							
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50

BS 3882:2015 Topsoil Analytical Report

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221902
Sample ID	TP04
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	18/08/17
Sampling Time	n/s

Parameter	Method	Result	Compliant with multi purpose range?	Compliant with specific purpose range? (Y/N)					
			(Y/N)	Acid.	Calc	Low F.	Low F. acidic	Low F. calc.	
Texture									
Clay content %	\$	24	See Figure 1 on Textural class sheet						
Silt content %	\$	70							
Sand content %	\$	5							
Soil texture – (see figure 1)	\$	Silty Clay Loam							
Soil organic matter content % (varying with clay content)									
Clay 5-20%	DETSC 2002#		N	N	N	N	N	N	N
Clay 20-35%	DETSC 2002#	5.8	Y	Y	Y	Y	Y	Y	Y
Maximum coarse fragment - Content % m/m									
>2 mm	\$	2	Y	Y	Y	Y	Y	Y	Y
>20 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
>50 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
Soil pH value	DETSC 2008#	6.3	Y	N	N	Y	N	N	N
Carbonate (Calcareous only) %	DETSC 2005	2.5	N/A	N/A	Y	N/A	N/A	Y	Y
Available plant nutrient content									
Total Nitrogen %	DETSC 2121*	0.23	Y	Y	Y	N/A	N/A	N/A	N/A
Extractable phosphorous mg/l	DETSC 2301*	23.4	Y	Y	Y	N	N	N	N
Extractable potassium mg/l	DETSC 2301*	180	Y	Y	Y	N/A	N/A	N/A	N/A
Extractable magnesium mg/l	DETSC 2301*	342	Y	Y	Y	N/A	N/A	N/A	N/A
Carbon: Nitrogen ratio		14.63	Y	Y	Y	Y	Y	Y	Y
Electrical Conductivity	DETSC 2009	1800	Y	N/A	N/A	N/A	N/A	N/A	N/A
Phytotoxic contaminants (by soil pH) mg/kgDS									
Zinc (Nitric acid extract)	DETSC 2301*	55.8	Y	Y	Y	Y	Y	Y	Y
Copper (Nitric acid extract)	DETSC 2301	15.3	Y	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	DETSC 2301	18	Y	Y	Y	Y	Y	Y	Y
Visible contaminants % m/m									
>2 mm	*	0	Y	Y	Y	Y	Y	Y	Y
...of which plastics	*	0	Y	Y	Y	Y	Y	Y	Y
...man made sharps	*	0	Y	Y	Y	Y	Y	Y	Y

Additional analytical certificate(s) for particle size distribution analysis are appended.

- MCERTS (accred. only implied if report carries the MCERTS logo). * - unaccredited test. \$ - completed by approved subcontractor.

DECLARATION: I certify that this sample of soil has been analysed in accordance with BS3882:2015

Signature:



BS 3882: Textural Class

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Results: Proportion in class (%)			Help messages
Clay	Silt	Sand	must sum to 100
24	70	5	

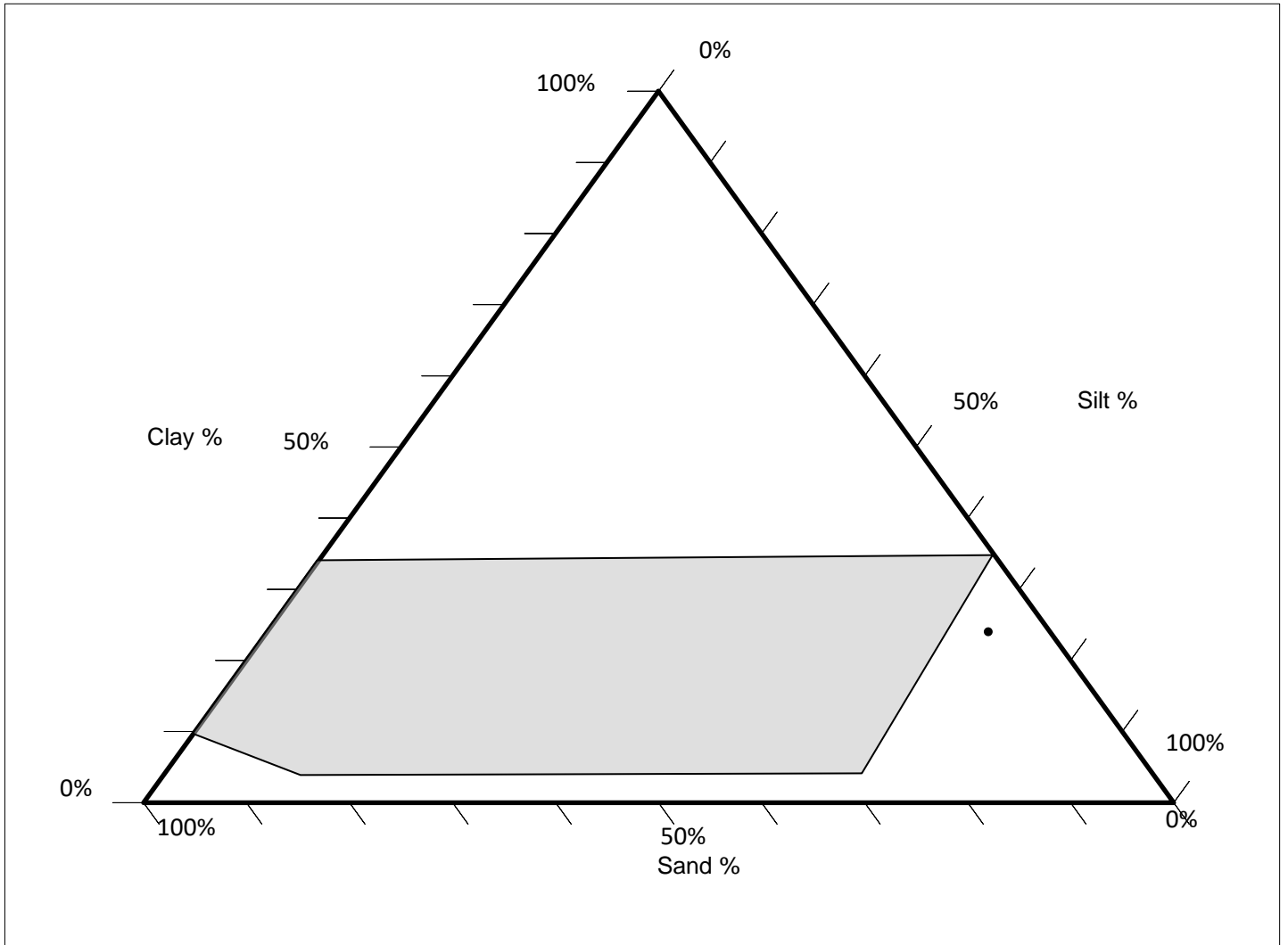


Figure 1

The textural class is required to be in the shaded area to be compliant with BS3882:2015

Results are shown by the grey point in the chart

Plotting parameters		Help messages
Printer correction:	1.1	
Tick interval (0 - 0.5):	0.1	
Tick length (0 - 0.2):	0.03	
Plot lines? (Y or N):	n	

BS 3882:2015 Topsoil Analytical Report

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221912
Sample ID	TP19
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	18/08/17
Sampling Time	n/s

Parameter	Method	Result	Compliant with multi purpose range?	Compliant with specific purpose range? (Y/N)					
			(Y/N)	Acid.	Calc	Low F.	Low F. acidic	Low F. calc.	
Texture									
Clay content %	\$	30	See Figure 1 on Textural class sheet						
Silt content %	\$	66							
Sand content %	\$	4							
Soil texture – (see figure 1)	\$	Silty Clay Loam							
Soil organic matter content % (varying with clay content)									
Clay 5-20%	DETSC 2002#		N	N	N	N	N	N	N
Clay 20-35%	DETSC 2002#	3.6	N	N	N	Y	Y	Y	Y
Maximum coarse fragment - Content % m/m									
>2 mm	\$	2	Y	Y	Y	Y	Y	Y	Y
>20 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
>50 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
Soil pH value	DETSC 2008#	6.4	Y	N	N	Y	N	N	N
Carbonate (Calcareous only) %	DETSC 2005	2.1	N/A	N/A	Y	N/A	N/A	Y	Y
Available plant nutrient content									
Total Nitrogen %	DETSC 2121*	0.21	Y	Y	Y	N/A	N/A	N/A	N/A
Extractable phosphorous mg/l	DETSC 2301*	15.3	N	N	N	Y	Y	Y	Y
Extractable potassium mg/l	DETSC 2301*	108	N	N	N	N/A	N/A	N/A	N/A
Extractable magnesium mg/l	DETSC 2301*	342	Y	Y	Y	N/A	N/A	N/A	N/A
Carbon: Nitrogen ratio		9.94	Y	Y	Y	Y	Y	Y	Y
Electrical Conductivity	DETSC 2009	1700	Y	N/A	N/A	N/A	N/A	N/A	N/A
Phytotoxic contaminants (by soil pH) mg/kgDS									
Zinc (Nitric acid extract)	DETSC 2301*	42.3	Y	Y	Y	Y	Y	Y	Y
Copper (Nitric acid extract)	DETSC 2301	7.1	Y	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	DETSC 2301	13.5	Y	Y	Y	Y	Y	Y	Y
Visible contaminants % m/m									
>2 mm	*	0	Y	Y	Y	Y	Y	Y	Y
...of which plastics	*	0	Y	Y	Y	Y	Y	Y	Y
...man made sharps	*	0	Y	Y	Y	Y	Y	Y	Y

Additional analytical certificate(s) for particle size distribution analysis are appended.

- MCERTS (accred. only implied if report carries the MCERTS logo). * - unaccredited test. \$ - completed by approved subcontractor.

DECLARATION: I certify that this sample of soil has been analysed in accordance with BS3882:2015

Signature:



BS 3882: Textural Class

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Results: Proportion in class (%)			Help messages
Clay	Silt	Sand	
30	66	4	

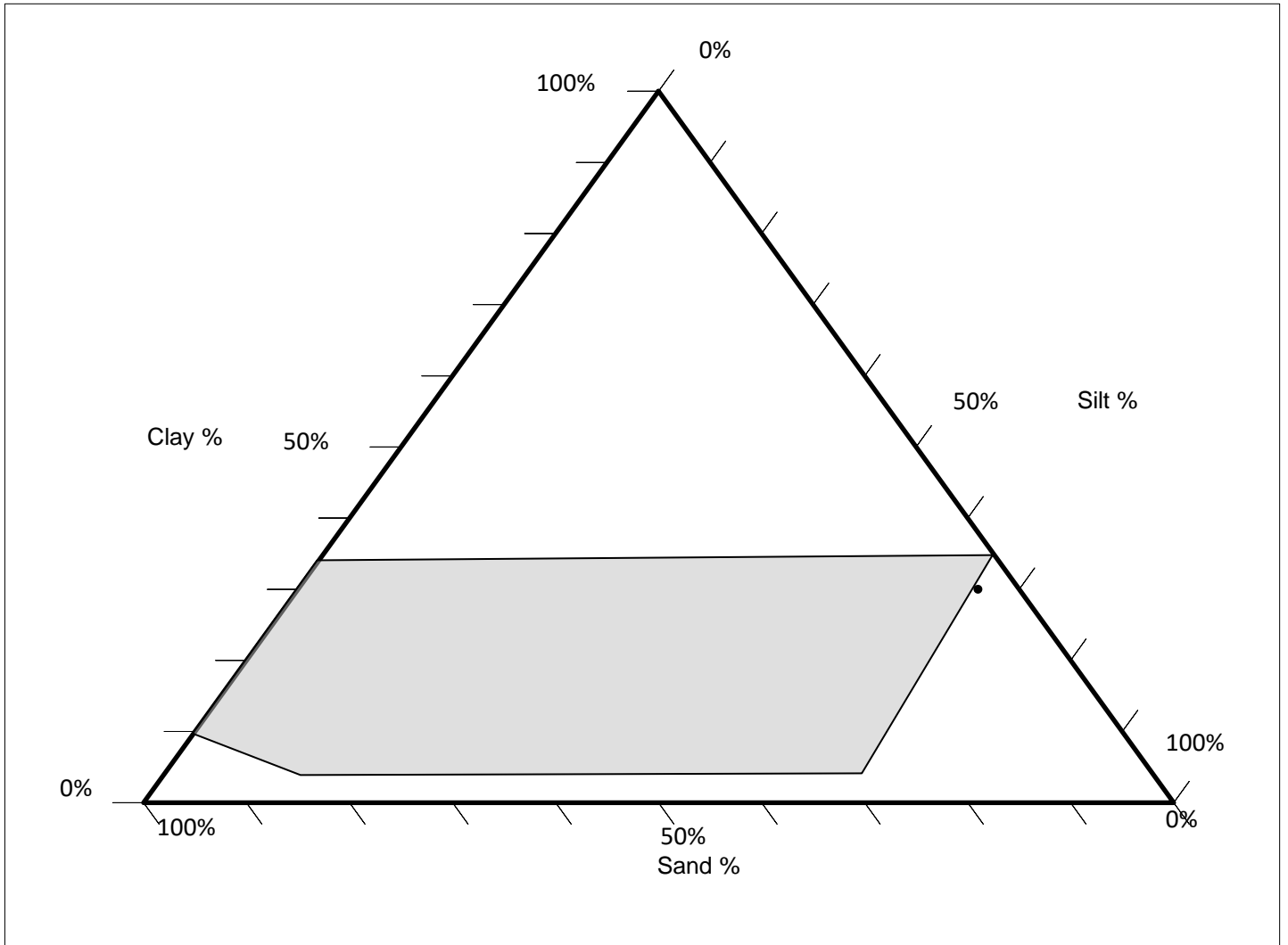


Figure 1

The textural class is required to be in the shaded area to be compliant with BS3882:2015

Results are shown by the grey point in the chart

Plotting parameters		Help messages
Printer correction:	1.1	
Tick interval (0 - 0.5):	0.1	
Tick length (0 - 0.2):	0.03	
Plot lines? (Y or N):	n	

BS 3882:2015 Topsoil Analytical Report

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	1221913
Sample ID	TP20
Depth	0.20
Other ID	
Sample Type	SOIL
Sampling Date	18/08/17
Sampling Time	n/s

Parameter	Method	Result	Compliant with multi purpose range?	Compliant with specific purpose range? (Y/N)					
			(Y/N)	Acid.	Calc	Low F.	Low F. acidic	Low F. calc.	
Texture									
Clay content %	\$	23	See Figure 1 on Textural class sheet						
Silt content %	\$	66							
Sand content %	\$	10							
Soil texture – (see figure 1)	\$	Silty Clay Loam							
Soil organic matter content % (varying with clay content)									
Clay 5-20%	DETSC 2002#		N	N	N	N	N	N	N
Clay 20-35%	DETSC 2002#	4.7	N	N	N	Y	Y	Y	Y
Maximum coarse fragment - Content % m/m									
>2 mm	\$	2	Y	Y	Y	Y	Y	Y	Y
>20 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
>50 mm	\$	0	Y	Y	Y	Y	Y	Y	Y
Soil pH value	DETSC 2008#	6.5	Y	N	N	Y	N	N	N
Carbonate (Calcareous only) %	DETSC 2005	0	N/A	N/A	N	N/A	N/A	N	N
Available plant nutrient content									
Total Nitrogen %	DETSC 2121*	0.18	Y	Y	Y	N/A	N/A	N/A	N/A
Extractable phosphorous mg/l	DETSC 2301*	22.3	Y	Y	Y	N	N	N	N
Extractable potassium mg/l	DETSC 2301*	194	Y	Y	Y	N/A	N/A	N/A	N/A
Extractable magnesium mg/l	DETSC 2301*	407.4	Y	Y	Y	N/A	N/A	N/A	N/A
Carbon: Nitrogen ratio		15.14	Y	Y	Y	Y	Y	Y	Y
Electrical Conductivity	DETSC 2009	1800	Y	N/A	N/A	N/A	N/A	N/A	N/A
Phytotoxic contaminants (by soil pH) mg/kgDS									
Zinc (Nitric acid extract)	DETSC 2301*	59.2	Y	Y	Y	Y	Y	Y	Y
Copper (Nitric acid extract)	DETSC 2301	13.6	Y	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	DETSC 2301	23.3	Y	Y	Y	Y	Y	Y	Y
Visible contaminants % m/m									
>2 mm	*	0	Y	Y	Y	Y	Y	Y	Y
...of which plastics	*	0	Y	Y	Y	Y	Y	Y	Y
...man made sharps	*	0	Y	Y	Y	Y	Y	Y	Y

Additional analytical certificate(s) for particle size distribution analysis are appended.

- MCERTS (accred. only implied if report carries the MCERTS logo). * - unaccredited test. \$ - completed by approved subcontractor.

DECLARATION: I certify that this sample of soil has been analysed in accordance with BS3882:2015

Signature:



BS 3882: Textural Class

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Results: Proportion in class (%)			Help messages
Clay	Silt	Sand	must sum to 100
23	66	10	

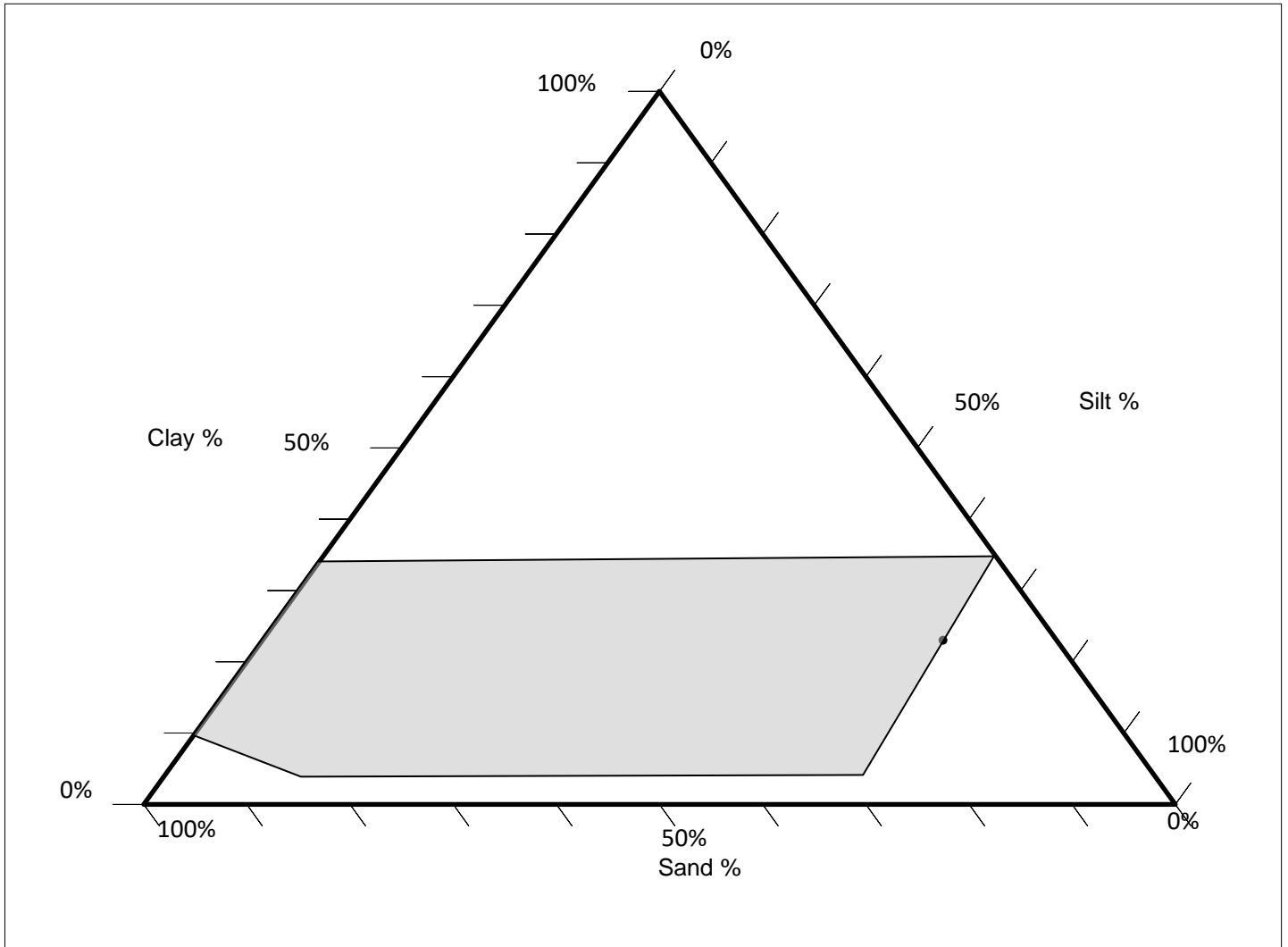


Figure 1

The textural class is required to be in the shaded area to be compliant with BS3882:2015

Results are shown by the grey point in the chart

Plotting parameters		Help messages
Printer correction:	1.1	
Tick interval (0 - 0.5):	0.1	
Tick length (0 - 0.2):	0.03	
Plot lines? (Y or N):	n	

BS 3882:2015 Topsoil Threshold Values

Parameter	Multipurpose Topsoil	Specific purpose topsoil				
		Acidic	Calcareous	Low fertility	Low fertility acidic	Low fertility calcareous
Soil texture <2mm fraction % m/m						
Clay content %		10 to 35				
Silt content %		0 to 65				
Sand content %		35 to 85				
Maximum coarse fraction % m/m						
>2 mm		30				
>20mm		10				
>50mm		0				
Mass loss on Ignition %						
Clay 5% to 20%	3 to 20	3 to 30	3 to 20	2 to 20	2 to 30	2 to 20
Clay 20% to 35%	5 to 20	5 to 30	5 to 20	2 to 20	2 to 30	2 to 20
Soil pH	5.5 to 8.5	3.5 to 5.5	7.5 to 9.0	3.5 to 9.0	3.5 to 5.5	7.5 to 9.0
Carbonate % m/m			>1			>1
Plant nutrient content						
Total nitrogen % m/m	>0.15	>0.15	>0.15	-	-	-
Extractable phosphate mg/l	16 to 140	16 to 140	16 to 140	≤20	≤20	≤20
Extractable potassium mg/l	121 to 1500	121 to 1500	121 to 1500	-	-	-
Extractable magnesium mg/l	51 to 600	51 to 600	51 to 600	-	-	-
Carbon : Nitrogen ratio	<20:1	<20:1	<20:1	<35:1	<35:1	<20:1
Electrical conductivity μS.cm-1	If greater than 3 300, carry out exchangeable sodium					

Multi purpose and specific purpose topsoils			
Potentially Phytotoxic elements (mg/kg dry basis)	Soil pH 6.0 to 7.0		
	Soil pH <6.0	7.0	Soil pH >7.0
Zn	<200	<200	<300
Cu	<100	<135	<200
Ni	<60	<75	<110
Visible contaminants %m/m			
of which plastics	<0.5		
Sharps, number	<0.25		

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-08694

Client Ref P16-483

Contract Title (P16-483) Alloa Phases 8 & 9

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1221901	TP02 0.30	SOIL	NAD	none	Jeff Cruddas
1221904	TP06 0.20	SOIL	NAD	none	Jeff Cruddas
1221905	TP07 0.60	SOIL	NAD	none	Jeff Cruddas
1221906	TP08 0.30	SOIL	NAD	none	Jeff Cruddas
1221907	TP09 1.50	SOIL	NAD	none	Jeff Cruddas
1221908	TP11 0.20	SOIL	NAD	none	Jeff Cruddas
1221909	TP12 0.40	SOIL	NAD	none	Jeff Cruddas
1221910	TP13 1.40	SOIL	NAD	none	Jeff Cruddas
1221911	TP18 0.50	SOIL	NAD	none	Jeff Cruddas
1221914	SP01 1.00	SOIL	NAD	none	Jeff Cruddas
1221915	SP02 1.50	SOIL	NAD	none	Jeff Cruddas
1221916	SP03 0.50	SOIL	NAD	none	Jeff Cruddas

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 17-08694
 Client Ref P16-483
 Contract (P16-483) Alloa Phases 8 & 9

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1221900	TP01 0.40 SOIL	18/08/17	GJ 250ml, PT 1L		
1221901	TP02 0.30 SOIL	18/08/17	GJ 250ml, PT 1L		
1221902	TP04 0.20 SOIL	18/08/17	GJ 250ml, PT 1L		
1221903	TP05 0.40 SOIL	18/08/17	GJ 250ml, PT 1L		
1221904	TP06 0.20 SOIL	18/08/17	GJ 250ml, PT 1L		
1221905	TP07 0.60 SOIL	18/08/17	GJ 250ml, PT 1L		
1221906	TP08 0.30 SOIL	18/08/17	GJ 250ml, PT 1L		
1221907	TP09 1.50 SOIL	18/08/17	GJ 250ml, PT 1L		
1221908	TP11 0.20 SOIL	18/08/17	GJ 250ml, PT 1L		
1221909	TP12 0.40 SOIL	18/08/17	GJ 250ml, PT 1L		
1221910	TP13 1.40 SOIL	18/08/17	GJ 250ml, PT 1L		
1221911	TP18 0.50 SOIL	18/08/17	GJ 250ml, PT 1L		
1221912	TP19 0.20 SOIL	18/08/17	GJ 250ml, PT 1L		
1221913	TP20 0.20 SOIL	18/08/17	GJ 250ml, PT 1L		
1221914	SP01 1.00 SOIL	18/08/17	GJ 250ml, PT 1L		
1221915	SP02 1.50 SOIL	18/08/17	GJ 250ml, PT 1L		
1221916	SP03 0.50 SOIL	18/08/17	GJ 250ml, PT 1L		
1221917	TP09 1.50 LEACHATE	18/08/17	GJ 250ml, PT 1L		
1221918	TP13 1.40 LEACHATE	18/08/17	GJ 250ml, PT 1L		
1221919	TP18 0.50 LEACHATE	18/08/17	GJ 250ml, PT 1L		
1221920	SP02 1.50 LEACHATE	18/08/17	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix 10

Gas / Groundwater Monitoring Data



Gas and Groundwater Monitoring Results

Project Number:		PI6-483																
Site:		Alloa Phases 8 & 9																
Date:		05/09/2017																
Readings taken by:		DR																
Background Data		Weather Conditions										Damp						
		Ground Conditions (dry/wet):										Wet						
		Air Temperature (°C)										15						
		Atmospheric Pressure (mB) (start):										1006						
		Atmospheric Pressure (mB) (finish):										1005						
		O₂ (%)										20.6						
		CO₂ (%)										-						
		CH₄ (%)										-						
N₂ (%)										-								
Borehole No.	Time (hh:mm)	Gas										Groundwater		Sampling				
		O ₂ (%)	CO ₂ (%)	CH ₄ (%)	H ₂ S (%)	CO (ppm)	LEL	Flow (l/hr)	Wd ³ (mbgl)	DoW ⁴ (m)	Pr ⁵	R ⁶	S ⁷					
BH01		-	19.8	-	1.1	-	0.0	-	0.0	-	-	-	0.0	1.10	4.10	14.75 L	Y	N
BH02		-	18.5	-	1.3	-	0.0	-	0.0	-	-	-	0.0	1.20	3.75	-	-	-
BH03		-	20.1	-	1.1	-	0.0	-	0.0	-	-	-	18.5 to 0	0.95	3.80	-	-	-
BH04		-	19.3	-	2.1	-	0.0	-	0.0	-	-	-	0.0	1.15	4.30	-	-	-
BH05		-	19.9	-	1.5	-	0.0	-	0.0	-	-	-	4 to 0	1.05	4.20	15.5 L	Y	N
BH06		-	18.9	-	0.5	-	0.0	-	0.0	-	-	-	27.2 to 0	1.00	4.30	19.8 L	Y	Y
BH07		-	19.5	-	1.5	-	0.0	-	0.0	-	-	-	0.0	1.15	4.30	14.75 L	Y	N
BH08		-	19.8	-	1.8	-	0.0	-	0.0	-	-	-	0.0	1.10	3.80	9.2 L	Y	N
BH09		-	19.8	-	1.9	-	0.0	-	0.0	-	-	-	0.0	1.85	3.95	9 L	Y	N
BH10		-	20.3	-	0.5	-	0.0	-	0.0	-	-	-	13 to 0	0.90	4.10	14.25 L	Y	N
Remarks		*Ran out of string to continue purging*																
Borehole Damage Record/ Installation Record		Boreholes all ok.										Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well			5 – Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)			
Borehole Condition Statement		We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.																
Gas Monitor Model:		Serial No:										Recalibration Due:						
GFM430		11977										Nov 17						



Gas and Groundwater Monitoring Results

Project Number:		P16-483																	
Site:		Alloa Phases 8 & 9																	
Date:		28/09/17																	
Readings taken by:		DR																	
Background Data		Weather Conditions											Dry						
		Ground Conditions (dry/wet):											Wet						
		Air Temperature (°C)											15						
		Atmospheric Pressure (mB) (start):											1015						
		Atmospheric Pressure (mB) (finish):											1014						
		O₂ (%)											20.6						
		CO₂ (%)																	
		CH₄ (%)																	
N₂ (%)																			
Borehole No.	Time (hh:mm)	Gas											Groundwater		Sampling				
		O ₂ (%)		CO ₂ (%)		CH ₄ (%)		H ₂ S (%)		CO (ppm)		LEL	Flow (l/hr)		Wd ³ (mbgl)	DoW ⁴ (m)	Pr ⁵	R ⁶	S ⁷
		P ¹	SS ²	P ¹	SS ²	P ¹	SS ²	P ¹	SS ²	P ¹	SS ²		P ¹	SS ²					
BH01		-	20.8	-	0.1	-	0.0	-	-	-	-	0.0	0.0	0.0	1.00	4.15	-	-	-
BH02		-	20.8	-	0.1	-	0.0	-	-	-	-	0.0	5.2	0.0	1.05	3.60	-	-	-
BH03		-	19.6	-	1.9	-	0.0	-	-	-	-	0.0	17.2	0.6	0.90	3.80	-	-	-
BH04		-	20.7	-	0.5	-	0.0	-	-	-	-	0.0	24.3	0.6	0.90	4.30	-	-	-
BH05		-	20.7	-	0.1	-	0.0	-	-	-	-	0.0	0.0	0.0	0.65	4.25	-	-	-
BH06		-	20.7	-	0.1	-	0.0	-	-	-	-	0.0	0.0	0.0	0.50	4.60	-	-	-
BH07		-	20.6	-	0.3	-	0.0	-	-	-	-	0.0	0.0	0.0	0.85	4.35	-	-	-
BH08		-	20.5	-	0.3	-	0.0	-	-	-	-	0.0	0.0	0.0	0.70	3.80	-	-	-
BH09		-	19.8	-	1.9	-	0.0	-	-	-	-	0.0	0.0	0.0	1.65	4.20	-	-	-
BH10		-	20.5	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	0.75	4.20	-	-	-
Remarks																			
Borehole Damage Record/ Installation Record													Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well			5 – Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)			
Borehole Condition Statement		We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.																	
Gas Monitor Model:		Serial No:											Recalibration Due:						
GFM 436		12644											05/12/17						



Gas and Groundwater Monitoring Results

Project Number:		PI6-483																	
Site:		Alloa Phases 8 & 9																	
Date:		18/10/2017																	
Readings taken by:		CK																	
Background Data		Weather Conditions											Dry						
		Ground Conditions (dry/wet):											Damp						
		Air Temperature (°C)											9						
		Atmospheric Pressure (mB) (start):											1004						
		Atmospheric Pressure (mB) (finish):											1005						
		O₂ (%)											20.4						
		CO₂ (%)																	
		CH₄ (%)																	
N₂ (%)																			
Borehole No.	Time (hh:mm)	Gas											Groundwater		Sampling				
		O ₂ (%)		CO ₂ (%)		CH ₄ (%)		H ₂ S (%)		CO (ppm)		LEL	Flow (l/hr)		Wd ³ (mbgl)	DoW ⁴ (m)	Pr ⁵	R ⁶	S ⁷
		P ¹	SS ²	P ¹	SS ²	P ¹	SS ²	P ¹	SS ²	P ¹	SS ²		P ¹	SS ²					
BH01		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	1.05	4.15	-	-	-
BH02		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	1.05	3.60	-	-	-
BH03		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.90	3.75	-	-	-
BH04		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	1.00	4.20	-	-	-
BH05		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.70	4.20	-	-	-
BH06		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.60	4.55	-	-	-
BH07		-	20.4	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.95	4.30	-	-	-
BH08		-	20.4	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	1.50	3.90	-	-	-
BH09		-	20.4	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.80	4.10	-	-	-
BH10		-	20.4	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	0.85	4.20	-	-	-
Remarks																			
Borehole Damage Record/ Installation Record													Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well			5 – Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)			
Borehole Condition Statement		We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.																	
Gas Monitor Model:		Serial No:											Recalibration Due:						
GFM 430		10309											25/01/18						