APPENDIX D – SITE INVESTIGATION REPORT EXTRACTS

KEY:

TP1 — Trial Pit

BH1 — Cable Percussion Borehole

WS1 — Windowless Sampling Borehole

Drawing based on Survey Solutions, drawing No:22826UG-01 sheets 1-8 dated 07/11/2018 and Peter Dann, drawing No.10-8394_ZZ-DR-C19900 Revision P1 dated 05/11/2018.

APPLiED GEOLOGY

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Client: KIER CONSTRUCTION LTD

Project: FENLAND EDUCATION CAMPUS, WISBECH

Title: EXPLORATORY HOLE LOCATION PLAN

Drawn By:	Checked By:	Paper Size:
JS	AJS	A3

Scale:	Date:
1:1250	05.12.2018

Drawing No:	Revision:
AG2927-18-02	0

BOREHOLE LOG - CABLE PERCUSSION

BH1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 4
Start	27/11/2018	**Coordinates**	**Scale** 1:50
End	27/11/2018	**Ground Level** 2.67m AOD	**Total Depth** 38.15m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
					(0.40)	Soft brown and dark brown slightly sandy SILT with occasional rootlets.			
				2.27	0.40	(TOPSOIL)			
B	0.50					Loose light brown and greyish brown occasionally orangish brown silty fine to medium SAND.			
D	0.50					(TIDAL FLAT DEPOSITS)			
D	1.00				(1.20)				
S	1.00	N = 5							
						Below 1.40m bgl: becoming clayey.			
D	1.50			1.07	1.60	Soft dark grey mottled brown slightly sandy silty CLAY with occasional plant fragments.			
D	2.00				(0.80)	(TIDAL FLAT DEPOSITS)			
S	2.00	N = 5							
				0.27	2.40	Very soft grey slightly sandy silty CLAY with frequent plant fragments.			
B	2.50					(TIDAL FLAT DEPOSITS)			
D	2.50					*Below 2.50m bgl: becoming sandy and plant fragments become occasional.*			
UT	3.00	(42)			(1.10)	*Between 3.00m to 3.05m bgl: band of soft plastic pseudo-fibrous peat.*			
D	3.50			-0.83	3.50	Medium dense grey silty fine to medium SAND with rare plant fragments and roots.			
D	4.00					(TIDAL FLAT DEPOSITS)			
S	4.00	N = 12	4.00						
D	4.50								
B	5.00								
D	5.00								
D	5.50								
B	6.00					*Below 6.00m bgl: occasional pockets and bands of silty clay (<30mm in size).*			
D	6.00								
S	6.00	N = 13	6.00						
D	6.50								
D	7.00								
C	7.00	N = 12	7.00						
D	7.50				(8.50)				
D	8.00								
C	8.00	N = 12	8.00						
D	9.00								
S	9.00	N = 17	9.00						
D	10.00								

Continued next sheet

Chiselling			Groundwater Strikes					
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed	**Drilled:** Borehole Solutions Ltd
			3.10	Medium inflow	Medium inflow	2.50	4.50	
			4.80	Medium inflow	Medium inflow	4.50	4.50	**Logged:** AJS
			38.00	Fast inflow	Fast inflow	26.00		**Checked:** AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Water added from 4.50m to 4.80m bgl to aid drilling.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 250mm to 8.00m
200mm to 16.50m
150mm to 38.00m

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 4
Start	27/11/2018 **Coordinates**	**Scale**	1:50
End	27/11/2018 **Ground Level** 2.67m AOD	**Total Depth**	38.15m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
S	10.00	N = 14	10.00			Medium dense grey silty fine to medium SAND with rare plant fragments and roots. (TIDAL FLAT DEPOSITS)
D	11.50					
S	11.50	N = 13	11.50			
B	12.00			-9.33	12.00	Grey slightly gravelly silty fine to medium SAND. Gravel is fine to coarse subangular to rounded flint with rare siltstone. (TIDAL FLAT DEPOSITS)
D	12.00				(1.00)	
B	13.00			-10.33	13.00	Firm grey/bluish grey silty CLAY with frequent occasional plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS) *Below 13.20m bgl: occasional pockets and bands of soft dark brown plastic amorphous and pseudo-fibrous peat (<30mm in size).*
D	13.00					
S	13.00	N = 23	13.00		(1.20)	
				-11.53	14.20	Dense grey silty sandy GRAVEL with occasional pockets of grey clay down to 14.50m bgl (<20mm in size). Gravel is fine to coarse subangular to rounded flint, siltstone and rare chalk. (RIVER TERRACE DEPOSITS) *Below 14.50m bgl: shell fragments (<10mm in size).* *Below 14.80m bgl: shell fragments becomes fragments.*
D	14.50					
S	14.50	N = 31	14.50		(0.80)	
				-12.33	15.00	Dense greyish brown and grey slightly clayey slightly sandy GRAVEL. Gravel is fine to coarse subangular to rounded flint, shell fragments, siltstone and chalk. (RIVER TERRACE DEPOSITS)
D	16.00					
S	16.00	N = 32	16.00			
D	17.00					*Between 16.90m and 19.80m bgl: becoming grey with frequent shell fragments.*
B	17.50					
C	17.50	N = 20	17.50			*At 17.50m bgl: medium dense.*
					(7.70)	
B	19.00					*From 19m bgl: very dense.*
D	19.00					
C	19.00	N >50	19.00			

Continued next sheet

Chiselling

From	To	Duration (hh:mm)

Groundwater Strikes

Depth Strike	Remarks	Remarks	Cased	Sealed
3.10	Medium inflow	Medium inflow	2.50	4.50
4.80	Medium inflow	Medium inflow	4.50	4.50
38.00	Fast inflow	Fast inflow	26.00	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Water added from 4.50m to 4.80m bgl to aid drilling.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 250mm to 8.00m
200mm to 16.50m
150mm to 38.00m

APPLiED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	3 of 4
Start	27/11/2018 **Coordinates**	**Scale**	1:50
End	27/11/2018 **Ground Level** 2.67m AOD	**Total Depth**	38.15m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
						Dense greyish brown and grey slightly clayey slightly sandy GRAVEL. Gravel is fine to coarse subangular to rounded flint, shell fragments, siltstone and chalk. (RIVER TERRACE DEPOSITS) *Below 20.00m bgl: chalk gravel becomes frequent, with occasional very soft grey silty clay pockets (<50mm in size).*			
B	21.50								
C	21.50	N >50	21.50						
D	22.70			-20.03	22.70	Firm to stiff grey and greyish brown silty slightly sandy CLAY with rare gypsum (<5mm in size). (GLACIAL TILL)			
B	23.00								
D	23.00								
S	23.00	N = 25	23.00		(1.30)				
				-21.33	24.00	Stiff to very stiff grey slightly gravelly silty CLAY. Gravel is fine to coarse subangular to rounded chalk with rare flint and limestone. (GLACIAL TILL)			
D	24.50								
S	24.50	N >50	24.50						
D	26.00					*Below 26.00m bgl: becoming gravelly and very stiff.*			
S	26.00	N >50	26.00						
D	27.50					*From 27.50m bgl: gravel is fine to medium.*			
S	27.50	N >50	26.00						
D	29.00								
S	29.00	N >50	26.00						
					(12.00)				

Continued next sheet

Chiselling

From	To	Duration (hh:mm)

Groundwater Strikes

Depth Strike	Remarks	Remarks	Cased	Sealed
3.10	Medium inflow	Medium inflow	2.50	4.50
4.80	Medium inflow	Medium inflow	4.50	4.50
38.00	Fast inflow	Fast inflow	26.00	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Water added from 4.50m to 4.80m bgl to aid drilling.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 250mm to 8.00m
200mm to 16.50m
150mm to 38.00m

APPLiED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	4 of 4
Start	27/11/2018 **Coordinates**	**Scale**	1:50
End	27/11/2018 **Ground Level** 2.67m AOD	**Total Depth**	38.15m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
						Stiff to very stiff grey slightly gravelly silty CLAY. Gravel is fine to coarse subangular to rounded chalk with rare flint and limestone. (GLACIAL TILL)			
D	30.50								
S	30.50	N >50	26.00						
B	32.00					*Below 32.00m bgl: becoming fissured. Fissures are extremely closely spaced horizontal dull with silt dusting (<2mm thick).*			
D	32.00								
S	32.00	N >50	26.00						
D	34.00								
S	34.00	N >50	26.00						
B	36.00			-33.33	36.00	Very stiff thinly laminated grey and greyish brown silty CLAY. Laminations frequently coated with light grey silt. (GLACIOLACUSTRINE DEPOSITS)			
D	36.00								
S	36.00	N >50	26.00						
					(2.15)				
D	38.00								
S	38.00	N >50	26.00	-35.48	38.15	End of Borehole at 38.15m			

Chiselling			Groundwater Strikes				
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed
			3.10	Medium inflow	Medium inflow	2.50	4.50
			4.80	Medium inflow	Medium inflow	4.50	4.50
			38.00	Fast inflow	Fast inflow	26.00	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Water added from 4.50m to 4.80m bgl to aid drilling.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 250mm to 8.00m
200mm to 16.50m
150mm to 38.00m

Exploratory hole logs should be read in conjunction with key sheets

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 4
Start	21/11/2018 **Coordinates**	**Scale**	1:50
End	21/11/2018 **Ground Level** 2.55m AOD	**Total Depth**	30.25m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
					(0.30)	Grass over brown and dark brown slightly sandy slightly clayey SILT with frequent rootlets. (TOPSOIL)
				2.25	0.30	*Below 0.20m bgl: rootlets become occasional.*
B	0.50					Very soft brown mottled grey, occasionally mottled orangish brown slightly sandy silty CLAY. (TIDAL FLAT DEPOSITS)
D	0.50					
D	1.00					
D	1.20				(1.70)	
S	1.20	N = 1	1.00			
B	2.00			0.55	2.00	Very soft greyish brown and grey slightly sandy silty CLAY with frequent rootlets and plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS)
D	2.00					
S	2.00	N = 5	2.00		(0.50)	
D	2.50			0.05	2.50	*Between 2.10m and 2.15m bgl: band of dark brown plastic peat.*
						Loose grey silty fine to medium SAND with occasional roots. (TIDAL FLAT DEPOSITS)
D	3.00					
S	3.00	N = 6	3.00			
D	3.50					
D	4.00					
S	4.00	N = 5	4.00			
D	4.50					*Below 4.50m bgl: roots becoming rare.*
D	5.00					
S	5.00	N = 5	5.00			
D	6.00					
D	6.50					
S	6.50	N = 6	6.50			
D	7.50				(10.00)	
D	8.00					*Below 8.00m bgl: becoming greyish brown and grey.*
S	8.00	N = 9	8.00			
D	9.00					
D	9.50					
S	9.50	N = 9	9.50			

Continued next sheet

Chiselling			Groundwater Strikes				
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed
			2.70	Slow inflow	Slow inflow	2.70	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Refusal on potential cobble/boulder. Borehole backfilled with bentonite on completion.

Installation:

Diameter: 250mm to 10.00m
150mm to 30.00m
200mm to 18.00m

APPLiED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 4
Start	21/11/2018 **Coordinates**	**Scale**	1:50
End	21/11/2018 **Ground Level** 2.55m AOD	**Total Depth**	30.25m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
						Loose grey silty fine to medium SAND with occasional roots. (TIDAL FLAT DEPOSITS)			
D	10.50								
D	11.00					*Below 11.00m bgl: occasional coarse sand.*			
S	11.00	N = 8	11.00						
B	12.00					*Below 12.00m bgl: becoming gravelly. Gravel is fine to medium subangular to subrounded shell fragments, flint and siltstone.*			
D	12.00								
D	12.50			-9.95	12.50				
C	12.50	N = 14	12.50			Medium dense brownish grey and grey silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded shell fragments, flint, siltstone and sandstone. (RIVER TERRACE DEPOSITS)			
C	14.00	N = 16	14.00						
C	15.50	N = 18	15.50						
D	16.50					*Below 16.50m bgl: no silt becoming slightly sandy and grey with occasional chalk gravel.*			
D	17.00								
C	17.00	N = 16	17.00						
D	18.00				(11.10)	*Below 18.00m bgl: sand is medium to coarse.*			
D	18.50								
C	18.50	N = 23	18.50						
D	19.50					*Below 19.50m bgl: becoming slightly clayey.*			
D	20.00					Continued next sheet			

Chiselling			Groundwater Strikes				
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed
			2.70	Slow inflow	Slow inflow	2.70	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Refusal on potential cobble/boulder. Borehole backfilled with bentonite on completion.

Installation:

Diameter: 250mm to 10.00m
150mm to 30.00m
200mm to 18.00m

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	3 of 4
Start	21/11/2018 **Coordinates**	**Scale**	1:50
End	21/11/2018 **Ground Level** 2.55m AOD	**Total Depth**	30.25m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
C	20.00	N = 28	20.00			Medium dense brownish grey and grey silty sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded shell fragments, flint, siltstone and sandstone. (RIVER TERRACE DEPOSITS) *From 20m bgl: gravel becomes coarser with depth.*			
D	21.00					*Below 21.00m bgl: chalk gravel becoming frequent with shell fragments becoming occasional.*			
D	21.50								
C	21.50	N = 28	21.50						
D	22.50								
D	23.00								
C	23.00	N = 35	23.00						
D	23.60			-21.05	23.60	Stiff to very stiff grey gravelly silty CLAY. Gravel is fine to coarse subangular to rounded chalk with rare flint. (GLACIAL TILL)			
D	24.00								
S	24.00	N = 35	24.00						
D	25.00								
D	25.50								
S	25.50	N = 41	24.50						
B	26.50								
D	26.50								
D	27.00				(6.65)				
S	27.00	N = 47	24.50						
D	28.00								
D	28.50								
S	28.50	N = 50	24.50						
D	29.50								
D	30.00								

Continued next sheet

Chiselling			Groundwater Strikes				
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed
			2.70	Slow inflow	Slow inflow	2.70	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Refusal on potential cobble/boulder. Borehole backfilled with bentonite on completion.

Installation:

Diameter: 250mm to 10.00m
150mm to 30.00m
200mm to 18.00m

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	4 of 4
Start	21/11/2018 **Coordinates**	**Scale**	1:50
End	21/11/2018 **Ground Level** 2.55m AOD	**Total Depth**	30.25m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
S	30.00	N = 50	24.50	-27.70	30.25	Stiff to very stiff grey gravelly silty CLAY. Gravel is fine to coarse subangular to rounded chalk with rare flint. (GLACIAL TILL)			
						End of Borehole at 30.25m			

Chiselling			Groundwater Strikes					
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed	
			2.70	Slow inflow	Slow inflow	2.70		

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Refusal on potential cobble/boulder. Borehole backfilled with bentonite on completion.

Installation:

Diameter: 250mm to 10.00m
150mm to 30.00m
200mm to 18.00m

Exploratory hole logs should be read in conjunction with key sheets

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH3

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 3
Start	14/11/2018 **Coordinates**	**Scale**	1:50
End	15/11/2018 **Ground Level** 2.77m AOD	**Total Depth**	30.00m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
					(0.50)	Soft dark brown and brown slightly sandy slightly gravelly SILT with frequent rootlets. Gravel is fine to medium subangular to rounded brick, ceramic and flint.
B	0.50			2.27	0.50	(MADE GROUND/TOPSOIL)
D	0.50					*Below 0.10m bgl: no gravel.*
D	1.00					Medium dense light brown and greyish brown occasionally orangish brown silty fine to medium SAND.
D	1.20					(TIDAL FLAT DEPOSITS)
S	1.20	N = 12	1.20			
					(2.00)	
D	1.70					
D	2.00					
S	2.00	N = 11	2.00			
						Below 2.30m bgl: becoming slightly clayey.
B	2.50			0.27	2.50	
D	2.50					Very soft brown occasionally mottled orangish brown slightly sandy clayey SILT with rare rootlets.
D	3.00					(TIDAL FLAT DEPOSITS)
S	3.00	N = 4	3.00			
D	3.50					
D	4.00					
S	4.00	N = 3	4.00			*Below 4.00m bgl: becoming brown mottled grey, occasionally orange-brown.*
D	4.50					*Below 4.50m bgl: occasional bands of silty sand (<50mm thick) and no rootlets.*
					(4.50)	
D	5.00					
S	5.00	N = 2	5.00			
D	6.00					
D	6.50					
S	6.50	N = 2	6.50			
				-4.23	7.00	Loose grey silty fine to medium SAND.
						(TIDAL FLAT DEPOSITS)
D	7.50					
D	8.00					
S	8.00	N = 7	8.00			
					(3.50)	
D	9.00					*Below 9.00m bgl: occasional medium gravel sized shell fragments on sand.*
D	9.50					*At 9.50m bgl: medium dense.*
S	9.50	N = 15	9.50			

Continued next sheet

Chiselling

From	To	Duration (hh:mm)

Groundwater Strikes

Depth Strike	Remarks	Remarks	Cased	Sealed
9.50	Fast inflow	Fast inflow	9.50	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 150mm to 30.00m
200mm to 20.00m
250mm to 10.00m

APPLIED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH3

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 3
Start	14/11/2018 **Coordinates**	**Scale**	1:50
End	15/11/2018 **Ground Level** 2.77m AOD	**Total Depth**	30.00m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
						Loose grey silty fine to medium SAND. (TIDAL FLAT DEPOSITS)			
D	10.50			-7.73	10.50				
					(0.50)	Very soft grey slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subrounded flint. (TIDAL FLAT DEPOSITS)			
D	11.00			-8.23	11.00				
S	11.00	N = 21	11.00			Medium dense grey slightly silty fine to medium SAND. (TIDAL FLAT DEPOSITS)			
D	12.00					*Below 12.00m bgl: becoming silty.*			
D	12.50								
S	12.50	N = 28	12.50						
					(4.00)				
D	13.50								
D	14.00								
S	14.00	N = 33	14.00			*Below 14.00m bgl: dense with occasional shell fragments (<10mm in size).*			
B	15.00			-12.23	15.00				
D	15.00					Dense grey silty sandy GRAVEL. Gravel is fine to medium subangular to rounded siltstone, flint, sandstone with frequent angular to subangular shell fragments (<20mm in size). (RIVER TERRACE DEPOSITS)			
D	15.50								
C	15.50	N = 31	15.50			*Below 16.00m bgl: gravel becomes fine to coarse.*			
D	16.50								
D	17.00								
C	17.00	N = 32	17.00						
D	18.00								
D	18.50								
C	18.50	N = 33	18.50						
D	19.50								
D	20.00				(10.00)				

Continued next sheet

Chiselling			Groundwater Strikes				
From	To	Duration (hh:mm)	Depth Strike	Remarks	Remarks	Cased	Sealed
			9.50	Fast inflow	Fast inflow	9.50	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 150mm to 30.00m
200mm to 20.00m
250mm to 10.00m

APPLiED GEOLOGY

BOREHOLE LOG - CABLE PERCUSSION

BH3

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	3 of 3
Start	14/11/2018 **Coordinates**	**Scale**	1:50
End	15/11/2018 **Ground Level** 2.77m AOD	**Total Depth**	30.00m

Sample / Test Type	Depth (m)	Result	Casing Depth (m)	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
C	20.00	N = 35	20.00			Dense grey silty sandy GRAVEL. Gravel is fine to medium subangular to rounded siltstone, flint, sandstone with frequent angular to subangular shell fragments (<20mm in size). (RIVER TERRACE DEPOSITS)			
D	21.00					*Below 21.00m bgl: becoming grey and brownish grey and slightly silty. Sand becoming coarser.*			
D	21.50								
C	21.50	N = 29	21.50			*Below 22.00m bgl: sand is coarse and gravel is brown.*			
D	22.50								
D	23.00								
C	23.00	N = 33	23.00						
D	24.00								
D	24.50								
C	24.50	N = 40	24.50						
B	25.00			-22.23	25.00	Stiff becoming very stiff thinly laminated brown mottled greyish brown silty CLAY. Laminations are occasionally coated with light brown silt. (GLACIOLACUSTRINE DEPOSITS)			
D	25.50								
D	26.00								
S	26.00	N = 37	25.00						
D	27.00								
PID	27.00	PID = 1.2							
B	27.50				(5.00)				
UT	27.50	(120)							
D	28.00					*Below 28.00m bgl: silt to fine sand sized quartz grains on laminations.*			
S	28.00	N = 40	25.00						
D	29.00								
D	29.50								
S	29.50	N = 42	25.00						
				-27.23	30.00	End of Borehole at 30.00m			

Chiselling

From	To	Duration (hh:mm)

Groundwater Strikes

Depth Strike	Remarks	Remarks	Cased	Sealed
9.50	Fast inflow	Fast inflow	9.50	

Drilled: Borehole Solutions Ltd

Logged: AJS

Checked: AP

Remarks: Hand dug service inspection pit excavated to 1.20m bgl.

Installation: 19mm diameter standpipe installed to 10.00m bgl.

Diameter: 150mm to 30.00m
200mm to 20.00m
250mm to 10.00m

Exploratory hole logs should be read in conjunction with key sheets

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Start	19/11/2018 **Coordinates**	**Scale**	1:25
End	19/11/2018 **Ground Level** 2.75m AOD	**Total Depth**	5.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
					(0.40)	Soft brown and dark brown slightly sandy slightly gravelly SILT with occasional rootlets. Gravel is fine to medium subangular to rounded brick, flint and ceramic. (MADE GROUND/TOPSOIL)
				2.35	0.40	
WAC	0.60					Loose light brown and greyish brown, occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)
WAC	1.00				(1.20)	
S	1.20	N = 5				
D	1.60		101mm /80%	1.15	1.60	Soft brown mottled dark grey silty CLAY with frequent rootlets and plant fragments (<15mm in size). (TIDAL FLAT DEPOSITS)
					(0.40)	*Between 1.90m and 1.95m bgl: band of soft dark brown, plastic pseudo-fibrous peat.*
S	2.00	N = 6		0.75	2.00	Very soft bluish grey occasionally mottled brown silty CLAY with frequent plant fragments (<10mm in size) (TIDAL FLAT DEPOSITS)
D	2.30				(0.40)	
			92mm /80%	0.35	2.40	Loose grey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS)
S	3.00	N = 7				
			92mm /70%			*Below 3.50m bgl: no rootlets.*
					(2.60)	
S	4.00	N = 9				
			79mm /80%			
D	5.00			-2.25	5.00	End of Borehole at 5.00m

Installation: 50mm diameter standpipe installed to 4.80m bgl.
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapsed before drilling from 5-6m below casing.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
4.40	4.25			

Drilled: DH
Logged: AJS
Checked: AP

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.73m AOD	**Total Depth**	4.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
					(0.40)	Grass over soft brown slightly sandy SILT with occasional rootlets. (MADE GROUND/TOPSOIL)			
				2.33	0.40				
WAC	0.60					Light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)			
					(1.25)				
S	1.20	N = 6							
D	1.50		101mm /98%			*Below 1.50m bgl: becomes fine to coarse sand.*			
				1.08	1.65				
D	2.00					Very soft bluish grey occasionally mottled brown silty CLAY with frequent rootlets. (TIDAL FLAT DEPOSITS)			
S	2.00	N = 1			(0.85)				
						Below 2.20m bgl: becoming slightly sandy and dark bluish grey.			
D	2.40		92mm /100%	0.23	2.50				
						Loose grey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS)			
S	3.00	N = 5							
					(1.50)	*Below 3.20m bgl: no rootlets.*			
			92mm /95%						
B	4.00			-1.27	4.00	End of Borehole at 4.00m			
S	4.00	N = 8							

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapsed up to 3.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes				
Depth Strike	Rose to	Remarks	Cased	Sealed

Drilled: DH

Logged: AJS

Checked: AP

Exploratory hole logs to be read in conjunction with key sheet

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS3

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Start	19/11/2018 **Coordinates**	**Scale**	1:25
End	19/11/2018 **Ground Level** 2.70m AOD	**Total Depth**	5.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
ES	0.20				(0.40)	Soft brown and dark brown slightly sandy slightly gravelly SILT. Gravel is subangular to rounded, fine to medium quartzite, with rare subangular brick. (MADE GROUND/TOPSOIL) *Below 0.25m bgl: no brick.*
				2.30	0.40	
WAC	0.50					Loose light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)
					(0.90)	
D	1.20					
S	1.20	N = 5		1.40	1.30	Soft brown and dark grey silty CLAY with occasional rootlets. (TIDAL FLAT DEPOSITS)
D	1.50		101mm /80%			
					(0.70)	*Below 1.80m bgl: becoming bluish grey and brown with occasional plant fragments (<10mm in size).*
S	2.00	N = 4		0.70	2.00	
				0.60	(0.10)	Soft dark brown plastic pseudo-fibrous PEAT. (TIDAL FLAT DEPOSITS)
D	2.20				2.10	Very soft bluish grey silty CLAY with frequent rootlets and plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS)
			92mm /95%		(0.70)	*Below 2.30m bgl: becoming sandy with roots and plant fragments becoming occasional.*
				-0.10	2.80	Loose grey silty fine to medium SAND with rare plant fragments (<5mm in size). (TIDAL FLAT DEPOSITS)
B	3.00					
S	3.00	N = 6	92mm /100%			
					(2.20)	
S	4.00	N = 8				*Below 4.00m bgl: no plant fragments.*
			79mm /100%			
				-2.30	5.00	End of Borehole at 5.00m

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole collapsed below casing up to 4.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
4.20	0.00			

Drilled: DH
Logged: AJS
Checked: AP

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS4

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
					(0.20)	Grass over soft dark brown sandy SILT with frequent rootlets. (TOPSOIL)			
				2.40	0.20	Light brown and greyish brown occasionally orangish brown silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)			
ES	0.50				(1.00)	*Below 0.80m bgl: no rootlets.*			
S	1.20	N = 5		1.40	1.20	Soft to firm fissured grey mottled brown silty CLAY with occasional roots and rootlets. Fissures are very closely spaced randomly orientated dull. (TIDAL FLAT DEPOSITS)			
D	1.30		101mm /70%		(0.70)	*Below 1.70m bgl: no fissures, roots and rootlets become frequent with occasional plant fragments (<10mm in size).* *Between 1.80m and 1.90m bgl: band of firm dark brown pseudo-fibrous peat.*			
				0.70	1.90	Very soft bluish grey slightly sandy silty CLAY with frequent rootlets and plant fragments (<20mm in size). (TIDAL FLAT DEPOSITS)			
S	2.00	N = 4			(0.20)				
D	2.20		92mm /85%	0.50	2.10	Loose bluish grey slightly clayey silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS) *Below 2.30m bgl: no clay or rootlets. Becoming wet.*			
S	3.00	N = 6							
			92mm /90%						
B	4.00								
S	4.00	N = 7			(3.90)				
			79mm /90%						
D	5.00								

Continued next sheet

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed

Drilled: DH

Logged: AJS

Checked: AP

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS4

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
S	5.00	N = 8	79mm /100%			Loose bluish grey slightly clayey silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)			
S	6.00	N = 8		-3.40	6.00	End of Borehole at 6.00m			

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes				
Depth Strike	Rose to	Remarks	Cased	Sealed

Drilled: DH

Logged: AJS

Checked: AP

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS5

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Start	19/11/2018 **Coordinates**	**Scale**	1:25
End	19/11/2018 **Ground Level** 2.73m AOD	**Total Depth**	5.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
					(0.35)	Soft brown and dark brown slightly sandy SILT with frequent rootlets. (TOPSOIL)			
				2.38	0.35				
D	0.50				(0.45)	Light brown and greyish brown, occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)			
				1.93	0.80				
WAC	1.00					Soft brown mottled dark grey silty CLAY with occasional rootlets. (TIDAL FLAT DEPOSITS)			
S	1.20	N = 6				*Between 1.30m and 2.00m bgl: firm.*			
			101mm /80%						
D	1.70				(1.80)				
S	2.00	N = 6							
D	2.10								
			92mm /90%			*At 2.50m bgl: shell <50mm in size.*			
				0.13	2.60				
					(0.15)	Very soft bluish grey occasionally mottled brown slightly sandy silty CLAY with occasional rootlets and plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS)			
				-0.02	2.75	Loose grey silty fine to medium SAND. (TIDAL FLAT DEPOSITS)			
S	3.00	N = 10							
			92mm /90%						
					(2.25)				
B	4.00								
S	4.00	N = 8							
			79mm /95%						
				-2.27	5.00	End of Borehole at 5.00m			

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
4.35	4.25			

Drilled: DH

Logged: AJS

Checked: AP

Exploratory hole logs to be read in conjunction with key sheet

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS6

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
						Soft brown and dark brown sandy SILT with occasional rootlets. (TOPSOIL)
WAC	0.30				(0.50)	
				2.10	0.50	Loose light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)
					(1.00)	
S	1.20	N = 4				*Below 1.30m bgl: becoming clayey.*
				1.10	1.50	Soft grey mottled brown and brownish grey silty CLAY with occasional roots, rootlets and rare plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS)
D	1.60		101mm /75%			*Below 1.70m bgl: becoming firm and roots become frequent.*
D	1.80				(0.50)	
D	1.90					*Between 1.90m and 2.00m bgl: band of dark brown plastic pseudo-fibrous peat.*
S	2.00	N = 3		0.60	2.00	Very soft bluish grey silty CLAY with occasional roots and rootlets. (TIDAL FLAT DEPOSITS)
D	2.20				(0.30)	
				0.30	2.30	Loose bluish grey slightly clayey silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)
			101mm /85%			*Below 2.80m bgl: becoming grey and wet and no clay.*
S	3.00	N = 7				
			92mm /100%			
S	4.00	N = 8				
					(3.70)	
D	4.50		79mm /100%			
S	5.00	N = 8				

Continued next sheet

Installation: 50mm diameter standpipe installed to 4.20m bgl.
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapse between 4.20m and 6.00m bgl.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.10	0.00			

Drilled: DH
Logged: AJS
Checked: AP

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS6

Project	Fenland Education Campus, Wisbech			**Project No.**	AG2927-18
Client	Kier Construction Ltd			**Sheet**	2 of 2
Start	13/11/2018	**Coordinates**		**Scale**	1:25
End	13/11/2018	**Ground Level**	2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
						Loose bluish grey slightly clayey silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)			
				-3.40	6.00	End of Borehole at 6.00m			

Installation: 50mm diameter standpipe installed to 4.20m bgl.
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapse between 4.20m and 6.00m bgl.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.10	0.00			

Drilled: DH

Logged: AJS

Checked: AP

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS7

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Start	19/11/2018 **Coordinates**	**Scale**	1:25
End	19/11/2018 **Ground Level** 2.90m AOD	**Total Depth**	5.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
ES	0.10				(0.30)	Soft brown and dark brown slightly sandy SILT with occasional rootlets. (MADE GROUND/TOPSOIL) *Below 0.10m bgl: slightly gravelly. Gravel is fine to medium subangular to subrounded ceramic and brick.*			
				2.60	0.30	Loose light brown, greyish brown occasionally orangish brown silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS) *Below 0.50m bgl: no rootlets.*			
D	0.80				(0.90)				
S	1.20	N = 6		1.70	1.20	Soft brown and dark grey slightly sandy silty CLAY with frequent rootlets and plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS) *Below 1.40m bgl: no sand.*			
D	1.30		101mm /85%		(0.80)				
S	2.00	N = 8		0.90	2.00	Dark brown plastic pseudo-fibrous PEAT. (TIDAL FLAT DEPOSITS) *Below 2.00m bgl: becoming bluish grey and brown.*			
D	2.30		92mm /90%		(0.60)				
D	2.60			0.30 0.25	2.60 (0.05) 2.65	Very soft bluish grey silty CLAY with frequent plant fragments (<15mm in size). (TIDAL FLAT DEPOSITS)			
S	3.00	N = 5	79mm /100%		(2.35)	Loose grey silty fine to medium SAND with occasional roots. (TIDAL FLAT DEPOSITS) *Below 3.20m bgl: no roots.*			
S	4.00	N = 7							
D	4.30		79mm /100%						
				-2.10	5.00	End of Borehole at 5.00m			

Installation: 50mm diameter standpipe installed to 5.00m bgl.
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapse below casing during last SPT. Collapsed to 4.30m bgl.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed

Drilled: DH
Logged: AJS
Checked: AP

APPLIED GEOLOGY

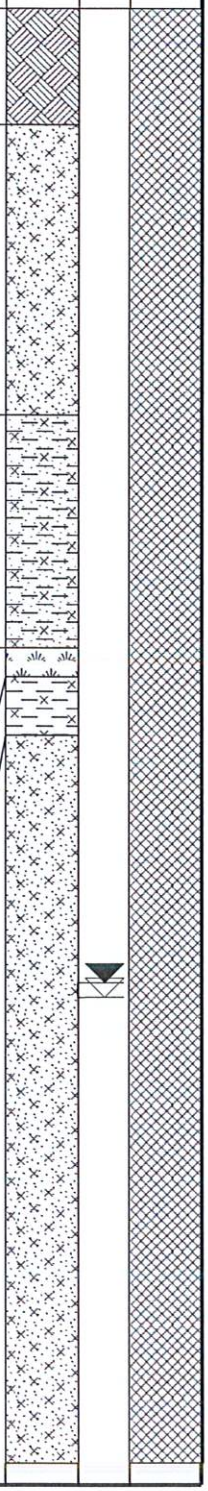
BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS8

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.65m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
ES	0.10				(0.40)	Grass over brown and dark brown sandy SILT with occasional rootlets. (TOPSOIL)
				2.25	0.40	Light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)
B	0.80				(1.00)	
S	1.20	N = 5				
				1.25	1.40	Soft dark grey mottled brown slightly sandy silty CLAY with occasional rootlets and plant fragments (<10mm in size). (TIDAL FLAT DEPOSITS) *Below 1.60m bgl: rootlets and roots are frequent and occasionally firm.*
D	1.50		101mm /80%		(0.80)	
D	2.00					
S	2.00	N = 2				
D	2.20			0.45	2.20	Soft plastic dark brown pseudo-fibrous PEAT with occasional bluish grey clay pockets (<30mm in size). (TIDAL FLAT DEPOSITS)
				0.35	(0.10) 2.30	
D	2.40		101mm /95%	0.15	(0.20) 2.50	Very soft bluish grey and grey silty CLAY with occasional rootlets and roots. (TIDAL FLAT DEPOSITS)
B	2.80					Loose grey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS)
S	3.00	N = 8				*Below 3.00m bgl: no rootlets and wet.*
			92mm /90%			
S	4.00	N = 7				
					(3.50)	
			79mm /100%			
D	5.00					

Continued next sheet



Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.40	3.35			

Drilled: DH
Logged: AJS
Checked: AP

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS8

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.65m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
S	5.00	N = 6	70mm /100%			Loose grey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS)			
D	6.00			-3.35	6.00				
S	6.00	N = 7				End of Borehole at 6.00m			

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.40	3.35			

Drilled: DH

Logged: AJS

Checked: AP

APPLIED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS9

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata
ES	0.10				(0.20)	Grass over soft brown and dark brown slightly sandy SILT with occasional rootlets.
				2.40	0.20	(TOPSOIL)
						Light brown and greyish brown occasionally orangish brown silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)
					(1.00)	
B	0.80					*Below 1.00m bgl: no rootlets.*
S	1.20	N = 8		1.40	1.20	Soft to firm grey mottled brown silty CLAY with frequent rootlets and roots. (TIDAL FLAT DEPOSITS)
D	1.50		101mm /75%		(0.85)	
S	2.00	N = 4				*Below 1.90m bgl: becoming very soft to soft with occasional plant fragments (<20mm in size) and occasional bluish grey mottling.*
D	2.10			0.55	2.05	*At 2.00m bgl: band of dark brown plastic pseudo-fibrous peat (<50mm thick).*
					(0.35)	Very soft bluish grey silty CLAY with frequent rootlets and plant fragments (<20mm in size). (TIDAL FLAT DEPOSITS)
				0.20	2.40	*Below 2.20m bgl: becoming sandy.*
			101mm /90%			Loose bluish grey clayey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS) *Below 2.60m bgl: becoming grey with no clay, occasional rootlets and rare plant fragments (<10mm in size).*
S	3.00	N = 6				
			92mm /90%			
D	4.00					
S	4.00	N = 8				
					(3.60)	
			79mm /100%			
S	5.00	N = 8				

Continued next sheet

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapsed at 5.00m bgl up to 3.00m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.20	2.95			

Drilled: DH
Logged: AJS
Checked: AP

APPLiED GEOLOGY

BOREHOLE LOG - DRIVEN CONTINUOUS SAMPLING

WS9

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	2 of 2
Start	13/11/2018 **Coordinates**	**Scale**	1:25
End	13/11/2018 **Ground Level** 2.60m AOD	**Total Depth**	6.00m

Sample / Test Type	Depth (m)	Result	Dia./ Rec.	Level (mAoD)	Strata Depth (thickness) (m)	Description of Strata	Legend	GW	Install
D	5.50		70mm /95%			Loose bluish grey clayey silty fine to medium SAND with occasional rootlets. (TIDAL FLAT DEPOSITS) *Below 5.00m bgl: no roots/plant fragments.*			
				-3.40	6.00	End of Borehole at 6.00m			

Installation:
Remarks: Hand dug service inspection pit excavated to 1.20m bgl. Collapsed at 5.00m bgl up to 3.00m bgl. Borehole backfilled with arisings on completion.

Groundwater Strikes

Depth Strike	Rose to	Remarks	Cased	Sealed
3.20	2.95			

Drilled: DH

Logged: AJS

Checked: AP

APPLiED GEOLOGY

TRIAL PIT LOG

TP1

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.94m AOD **Coordinates**	**Total Depth**	4.00m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
B	0.10					Soft brown and dark brown sandy SILT with occasional roots and rootlets. (TOPSOIL)		
ES	0.20			(0.50)				
			2.44	0.50		Light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
B	1.00			(1.30)				
			1.14	1.80		Soft dark grey mottled brown silty slightly sandy CLAY with occasional rootlets. (TIDAL FLAT DEPOSITS) *Below 1.90m bgl: rootlets become frequent and frequent plant fragments (<20mm in size).*		
D	2.00			(0.50)				
			0.64	2.30		Soft plastic dark brown pseudo-fibrous PEAT. (TIDAL FLAT DEPOSITS)		
D	2.40			(0.20)				
			0.44	2.50		Soft bluish grey silty CLAY with frequent roots and plant fragments (<20mm in size). (TIDAL FLAT DEPOSITS) *Below 2.70m bgl: becoming slightly sandy.*		
D	2.60			(0.30)				
			0.14	2.80		Bluish grey silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
				(1.20)				
D	3.50					*Below 3.60m bgl: becoming damp.*		
			-1.06	4.00		End of Trial Pit at 4.00m		

Method: Backhoe excavator

Groundwater: Seepage at 3.80m bgl.

Stability: Stable.

Remarks: Trial pit backfilled with arisings on completion.

Length:	4.00m
Width:	0.60m
Logged:	AJS
Checked:	AP

APPLIED GEOLOGY

TRIAL PIT LOG

TP2

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.67m AOD **Coordinates**	**Total Depth**	3.80m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
				(0.40)		Soft dark brown and brown sandy SILT with occasional rootlets. (TOPSOIL)		
ES	0.30		2.27	0.40				
				(1.40)		Light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
			0.87	1.80	E	Soft to firm dark grey mottled brown slightly sandy silty CLAY with rare rootlets. (TIDAL FLAT DEPOSITS)		
D	2.00			(0.40)				
HV	2.00	Cu = 65						
			0.47	2.20		Soft plastic dark brown amorphous PEAT. (TIDAL FLAT DEPOSITS)		
D	2.30			(0.30)				
			0.17	2.50		Bluish grey silty fine to medium SAND. (TIDAL FLAT DEPOSITS) *Below 2.60m bgl: rare brown mottling.*		
D	3.00			(1.30)				
			-1.13	3.80		End of Trial Pit at 3.80m		

Method: Backhoe excavator

Groundwater: Seepage at 3.60m bgl and 3.80m bgl.

Stability: Slight collapse below 2.80m bgl.

Remarks: Trial pit backfilled with arisings on completion.

Length:	4.00m
Width:	0.60m
Logged:	AJS
Checked:	AP

APPLiED GEOLOGY

TRIAL PIT LOG

TP4

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.81m AOD **Coordinates**	**Total Depth**	3.00m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
ES	0.10			(0.30)	E	Soft dark brown slightly gravelly sandy SILT with occasional roots and rootlets. (TOPSOIL)		
			2.51	0.30				
D	0.50					Light brown occasionally greyish brown and orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
					E			
				(1.50)		*Below 1.00m bgl: occasional brought up as 'bedded' slabs. Beds/lamination <10mm thick.*		
			1.01	1.80				
B	2.00					Bluish grey mottled orangish brown slightly clayey silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
				(1.20)	E			
			-0.19	3.00		End of Trial Pit at 3.00m		

Method: Backhoe excavator

Groundwater: Groundwater not encountered. Sand below 1.80m bgl wet.

Stability: Collapse below 1.80m bgl. Collapse of right hand side wall just after taking pictures.

Remarks: Trial pit backfilled with arisings on completion.

Length:	4.50m
Width:	0.60m
Logged:	AJS
Checked:	AP

TRIAL PIT LOG

TP5

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.76m AOD **Coordinates**	**Total Depth**	4.00m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
						Soft dark brown slightly sandy slightly gravelly SILT with occasional rootlets. Gravel is fine to medium subangular to rounded brick and rare ceramic. (MADE GROUND/TOPSOIL)		
D	0.20			(0.35)	E			
ES	0.20					*Below 0.30m bgl: no gravel.*		
			2.41	0.35				
						Light brown occasionally orangish brown and greyish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
B	0.80							
				(1.25)	E			
			1.16	1.60				
						Very soft grey mottled brown slightly sandy silty CLAY with occasional rootlets. (TIDAL FLAT DEPOSITS)		
D	1.70							
HV	1.70	Cu = 60		(0.30)				
					E	*Below 1.80m bgl: becoming dark grey occasionally mottled brown.*		
			0.86	1.90				
						Soft dark brown slightly sandy slightly silty pseudo-fibrous PEAT. (TIDAL FLAT DEPOSITS)		
D	2.00							
				(0.70)				
			0.16	2.60				
						Bluish grey silty fine to medium SAND with rare roots (<10mm in diameter) (TIDAL FLAT DEPOSITS)		
D	2.70							
				(1.40)				
D	4.00		-1.24	4.00				
						End of Trial Pit at 4.00m		

Method: Backhoe excavator

Groundwater: Seepage at 3.80m bgl.

Stability: Stable.

Remarks: Trial pit backfilled with arisings on completion.

Length:	4.00m
Width:	0.60m
Logged:	AJS
Checked:	AP

TRIAL PIT LOG

TP6

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.80m AOD **Coordinates**	**Total Depth**	3.90m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
ES	0.10			(0.40)		Soft dark brown slightly gravelly sandy SILT with occasional rootlets. Gravel is fine to medium subangular to subrounded brick, flint and rare ceramic and quartzite. (MADE GROUND/TOPSOIL) *Below 0.20m bgl: no gravel.*		
			2.40	0.40				
ES	0.50					Light brown and greyish brown occasionally orangish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
B	1.00			(1.20)				
HV	1.00	Cu = 52						
			1.20	1.60				
D	1.70			(0.30)		Soft to very soft dark grey occasionally mottled brown slightly sandy silty CLAY with occasional rootlets. (TIDAL FLAT DEPOSITS)		
			0.90	1.90				
D	2.00			(0.30)		Soft plastic dark brown amorphous PEAT. (TIDAL FLAT DEPOSITS)		
			0.60	2.20				
D	2.30					Very soft bluish grey slightly sandy silty CLAY. (TIDAL FLAT DEPOSITS)		
HV	2.30	Cu = 20		(0.40)				
			0.20	2.60				
B	3.00					Bluish grey silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
				(1.30)				
D	3.90		-1.10	3.90				
						End of Trial Pit at 3.90m		

Method: Backhoe excavator

Groundwater: Seepage at 3.80m bgl.

Stability: Slight collapse below 2.60m bgl.

Remarks: Trial pit backfilled with arisings on completion.

Length:	3.00m
Width:	0.60m
Logged:	AJS
Checked:	AP

APPLiED GEOLOGY

TRIAL PIT LOG

TP7

Project	Fenland Education Campus, Wisbech	**Project No.**	AG2927-18
Client	Kier Construction Ltd	**Sheet**	1 of 1
Date	12/11/2018	**Scale**	1:25
Ground Level	2.61m AOD **Coordinates**	**Total Depth**	3.80m

Sample / Test Type	Depth (m)	Result	Level (mAoD)	Strata Depth (thickness) (m)	Ease of Dig	Description of Strata	Legend	GW
ES	0.10			(0.50)		Soft brown slightly gravelly sandy SILT with occasional rootlets. Gravel is fine to coarse subangular to rounded flint, brick and rare ceramic. (MADE GROUND/TOPSOIL)		
D	0.50		2.11	0.50		Light brown and light greyish brown silty fine to medium SAND. (TIDAL FLAT DEPOSITS)		
B	1.00			(1.40)				
D	2.00		0.71	1.90		Soft to firm dark grey slightly sandy silty CLAY with rare rootlets. (TIDAL FLAT DEPOSITS)		
HV	2.00	Cu = 67		(0.40)				
D	2.40		0.31	2.30		Soft plastic dark brown and bluish grey silty pseudo-fibrous PEAT. (TIDAL FLAT DEPOSITS)		
			0.01	(0.30) 2.60		Bluish grey silty fine to medium SAND with rare rootlets. (TIDAL FLAT DEPOSITS)		
D	3.00			(1.20)				
B	3.50							
			-1.19	3.80		End of Trial Pit at 3.80m		

Method: Backhoe excavator

Groundwater: Seepage at 3.80m bgl.

Stability: Stable.

Remarks: Trial pit backfilled with arisings on completion.

Length:	4.00m
Width:	0.60m
Logged:	AJS
Checked:	AP

APPLIED GEOLOGY

Exploratory Hole Log Key Sheet

Sample Notation

D	Small Disturbed sample
B	Bulk Disturbed sample
ES	Environmental sample
U	Undisturbed U100 sample
UT	Undisturbed UT100 sample
C	Core sample
W	Water sample

In Situ Test Notation

S	Standard Penetration Test
S (C)	Standard Penetration Test (cone)
HV	Hand Shear Vane Test
PID	Photoionization Detector Test
MEXE	Mexecone Cone Penetrometer Test
PP	Pocket Penetrometer Test
K	Permeability Test

Results Notation

Cu	Shear Strength	kN/m^2
N	SPT N Value	-
PID	VOC Concentration	ppm
( )	U/UT Blow Count	-

Rotary Core Notation

TCR	Total Core Recovery
SCR	Solid Core Recovery
RQD	Rock Quality Designation
FI	Fracture Index
If	Fracture Spacing
NI	Non Intact
NR	No Recovery
NA	Not Applicable

Ease of Dig

VE	Very Easy
E	Easy
M	Moderate
H	Hard
VH	Very Hard

Backfill Symbols

Sand

Gravel

Concrete

Bentonite

Arisings

Grout

Installation Symbols

Plain Standpipe

Slotted Standpipe

Piezometer

Vibrating Wire Piezometer

Inclinometer

Extensometer
(with magnet locations)

Groundwater (GW)

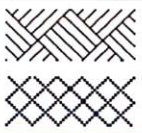
Rise

Groundwater Strike -
with Recorded Rise

Strike

Groundwater Strike -
No Recorded Rise

Legend Symbols



Topsoil

Made Ground

Concrete

Clay

Silt

Sand

Gravel

Peat

Cobbles

Boulders

Mudstone

Siltstone

Sandstone

Limestone

Chalk

Coal

Breccia

Conglomerate

Shale

Igenous Rock

Metamorphic Rock

NR NR
NR NR

No Recovery

Note: Most soils comprise a mixture of particle sizes. The soil type is graphically represented on the log and may be a combination of these symbols.

General Notes

1. Details of the standpipe/piezometer are given on the log. The 'Install' column shows a graphical representation of the installed including depth of instruments including slotted section or piezometer depth, and backfill details.

2. Standard Penetration Test is defined in BS EN ISO 17892. Total N value is shown on the logs, full details of the test increments, equipment references, water and casing levels shown on the SPT Summary Sheet.

APPLiED GEOLOGY

Ground Gas Monitoring and Flow Results

Project/Site Name Fenland Education Campus, Wisbech

Project Number AG2927-18

Date and Time of Monitoring 10/12/2018

Phase of Monitoring 1 of 3

BH No.	Flow Range (litres/hr over 3 mins)			Differential Pressure (pa)	Methane % v/v		Methane % LEL		Carbon dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	VOC (ppm)	Installed Depth (m bgl)	Diameter of installation (mm)	Water level (m bgl)
	Max	Min	Avg		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady					
BH1	Unable to get gas readings due to blockage in valve														10.00	19.00	2.07
BH3	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	1.8	1.8	13.5	13.5	0.0	0.0	10.00	19.00	2.18
WS1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	5.1	5.1	13.8	13.8	0.0	0.0	4.80	50.00	2.30
WS6	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	3.4	3.4	16.8	16.8	0.0	0.0	4.20	50.00	2.00
WS7	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	3.5	3.5	14.4	14.4	0.0	0.0	5.00	50.00	2.35

Meterological Data

Atmospheric Pressure (mb)	1026
Pressure Rising or Falling	Falling
Weather Conditions	Cloudy
Atmospheric Oxygen (% vol)	20.7
Wind Speed & Direction	Light breeze
Ambient Air Temperature (°C)	4

Site Data

Monitoring Personnel	Kevin Harper		
GPS Instrument			
Equipment Used	Gasmeter	PID	Flowmeter
Equipment Serial Number	G503948	109598-K1	G503948
Ground Conditions (vegetation stress, visual contamination)	Ploughed Field/ grass		

General Notes

Instrument specification data and calibration information is provided on a separate data sheet

APPLiED GEOLOGY

Ground Gas Monitoring and Flow Results

Project/Site Name Fenland Education Campus, Wisbech

Project Number AG2927-18

Date and Time of Monitoring 19/12/2018

Phase of Monitoring 2 of 3

BH No.	Flow Range (litres/hr over 3 mins)			Differential Pressure (pa)	Methane % v/v		Methane % LEL		Carbon dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	VOC (ppm)	Installed Depth (m bgl)	Diameter of installation (mm)	Water level (m bgl)
	Max	Min	Avg		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady					
BH1	Unable to get gas readings due to blockage in valve. Valve Replaced.														10.00	19.00	1.90
BH3	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	1.3	0.9	12.4	12.3	0.0	0.0	10.00	19.00	2.03
WS1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	5.4	5.4	11.9	11.9	0.0	0.0	4.80	50.00	2.15
WS6	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	5.2	5.2	12.9	12.9	0.0	0.0	4.20	50.00	2.00
WS7	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	3.7	3.7	13.5	13.5	0.0	0.0	5.00	50.00	2.20

Meterological Data

Atmospheric Pressure (mb)	1006
Pressure Rising or Falling	Falling
Weather Conditions	Cloudy
Atmospheric Oxygen (% vol)	21
Wind Speed & Direction	Light breeze
Ambient Air Temperature (°C)	8

Site Data

Monitoring Personnel	Andrew Silvie		
GPS Instrument			
Equipment Used	Gasmeter	PID	Flowmeter
Equipment Serial Number	G503948	109598-K1	G503948
Ground Conditions (vegetation stress, visual contamination)	Ploughed Field/ grass		

General Notes

Instrument specification data and calibration information is provided on a separate data sheet

APPLiED GEOLOGY

Ground Gas Monitoring and Flow Results

Project/Site Name Fenland Education Campus, Wisbech

Project Number AG2927-18

Date and Time of Monitoring 03/01/2019

Phase of Monitoring 3 of 3

BH No.	Flow Range (litres/hr over 3 mins)			Differential Pressure (pa)	Methane % v/v		Methane % LEL		Carbon dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	VOC (ppm)	Installed Depth (m bgl)	Diameter of installation (mm)	Water level (m bgl)
	Max	Min	Avg		Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady					
BH1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	21.3	21.3	0.0	0.1	10.00	19.00	1.82
BH3	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	1.8	1.8	10.6	10.7	0.0	0.0	10.00	19.00	1.80
WS1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	4.8	4.8	17.0	17.0	0.0	0.0	4.80	50.00	1.84
WS6	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	4.2	3.8	17.8	17.9	0.0	0.0	4.20	50.00	1.86
WS7	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	3.4	3.4	18.1	18.1	0.0	0.0	5.00	50.00	1.90

Meterological Data

Atmospheric Pressure (mb)	1043
Pressure Rising or Falling	Rising
Weather Conditions	Cloudy
Atmospheric Oxygen (% vol)	21.3
Wind Speed & Direction	Light breeze
Ambient Air Temperature (°C)	4

Site Data

Monitoring Personnel	Andrew Silvie		
GPS Instrument			
Equipment Used	Gasmeter	PID	Flowmeter
Equipment Serial Number	G503948	109598-K1	G503948
Ground Conditions (vegetation stress, visual contamination)	Ploughed Field/ grass		

General Notes

Instrument specification data and calibration information is provided on a separate data sheet

APPLiED GEOLOGY

Gas Monitoring Equipment Specification and Accuracy Details

Instrument Specifications

Instrument	Atmospheric Pressure Range	Temperature Range	Flow Range	Flow Resolution	Borehole Pressure Range
GFM 430	800 to 1200 mbar+/- 1m bar	-10°C to + 40°C	-30 to +30 l/hr	0.1l/hr	+1000 to - 1000 Pa
GA5000	500-1500 mb +/- 5 mb	-10°C to + 50°C	0-20 lt/hr +/- 0.3 l/hr	0.1l/hr	.+500/-500 mbar +/- 4 mbar
Pro Check Tiger	-	-20 to + 60°C (Certified to -15 to + 45°C)	-	-	-

Instrument Accuracy

Instrument		Methane	Lower Explosive Limit	Carbon Dioxide	Oxygen	Volatile Organic Compounds	Hydrogen Sulphide	Carbon Monoxide
GFM430	Detection Range	0-100%	0-100%	0 -100%	0-25%	NA	1500ppm response 30 secs	1000ppm response 30 Secs
	Detection Accuracy	+/- 0.2% @ 5% 1.0% @30% 3.0% @ 100% Response 20 secs	+/-4% of LEL Response 40 secs	Accuracy 0.1% @10% 3.0% @40% 3% @ 100% Response 20 Secs	+/- 0.5% Response 20 secs	NA	5% of fs	5% of fs
GA5000	Detection Range	0-100%	-	0 -100%	0-25%	NA	0 -50ppm response <30 secs	0 - 1000ppm response <30 Secs
	Detection Accuracy	.+/- 0.5% @ 0 to 70%, +/-1.5% @ 70 to 100% Response < 10 secs	N/A	.+/- 0.5% @ 0 to 60%, +/-1.5% @ 60 to 100% Response < 10 secs	.+/- 1.0% @ 0 to 25%, Response < 20 secs	NA	.+/- 1.5% FS	.+/- 2% of FS
Pro Check Tiger	Detection Range	N/A	N/A	N/A	N/A	1 ppb - 10,000 ppm	N/A	N/A
	Detection Accuracy	N/A	N/A	N/A	N/A	+/- 1ppb +- 5% of actual displayed accuracy +/- One digit Response < 2sec	N/A	N/A

Calibration Frequency

Instruments are calibrated annually.

Details of the instrument calibration certificates and service records are available if required.

Equipment Serial Numbers

GA5000 (G503948)

GFM430 - (10072, 10347)

Pro Check Tiger - (T-108308, T-109597, T-109598, T-110423)

APPLiED GEOLOGY

GROUNDWATER SAMPLING RECORD

PROJECT:	Fenland Education Campus	**PROJECT No:**	AG2927-18
DATE:	19/12/2018	**PHASE OF SAMPLING:**	1 of 1
WEATHER:	Overcast/ Light Rain	**AIR TEMP (°C):** 8	**FIELD PERSONNEL:** Andrew Silvie

Monitoring Well	Standpipe Depth (m bgl)	Standpipe Diameter (mm)	Purging Method*1	Sampling Depth (m bgl)	Groundwater Level Before Purging (m bgl)	Groundwater Level After Purging (m bgl)	Purge Volume (l)	Sample Colour, Odour & Turbidity	Samples Taken *2			LNAPL/ DNAPL *3	Product Thickness (mm)
									P (l)	G (l)	V (no.)		
BH3	10.00	19	B	2.00	2.03	NR	8	Grey with silt	1	1	1	NR	NR
WS1	4.80	50	P	2.00	2.15	NR	11	Grey with silt	1	1	1	NR	NR
WS6	4.20	50	P	2.20	2.00	NR	9	Grey with silt	1	1	1	NR	NR
WS7	5.00	50	P	2.20	2.20	NR	12	Grey with silt	1	1	1	NR	NR

COMMENTS:

***Notes:**
1. W = Waterra Inertia Tubing, B = Disposable Bailer, P = Downhole Pump.
2. P = Plastic Bottle (l), G = Glass Bottle (l), V = Glass Vial (no.)
3. npd = No Product Detected

See Accompanying Gas Monitoring Sheet: Y

Sample Storage Method: Fridge

APPLiED GEOLOGY

APPLiED GEOLOGY

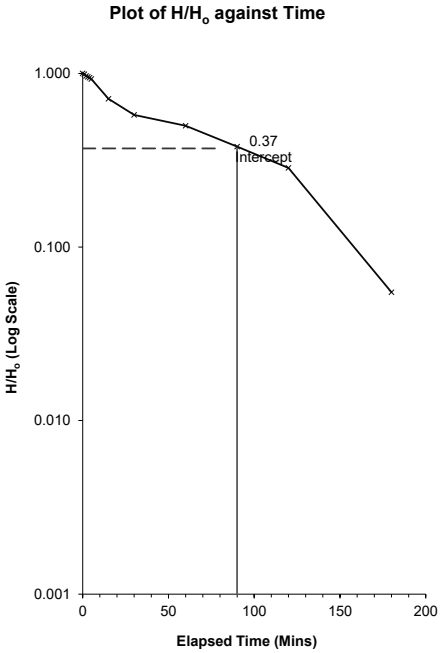
Variable Head Permeability Test Data Sheet

Job Name Fenland Education Campus

Job Number AG2927-18

Borehole No BH3

Field Data			
Elapsed Time (t) (mins)	Depth to water from top of casing or standpipe (m)	Head (H) (m)	Head Ratio (H/H_o)
0.0	0.20	1.82	1.000
1.0	0.22	1.80	0.989
2.0	0.26	1.76	0.967
3.0	0.28	1.74	0.956
4.0	0.30	1.72	0.945
5.0	0.33	1.69	0.929
15.0	0.72	1.30	0.714
30.0	0.97	1.05	0.577
60.0	1.11	0.91	0.500
90.0	1.33	0.69	0.379
120.0	1.50	0.52	0.286
180.0	1.92	0.10	0.055



Permeability Results

Does Plot of Time vs Head Ratio go below H/Ho = 0.37? **Yes** *Use Basic Time Lag*
Yes *Use General Approach*

Basic Time Lag Approach:

k = A/FT

Basic Time Lag T= 90 mins

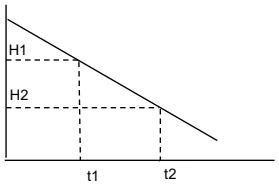
Permeability k= 5.E-07 m/sec

General Approach:

k = [A/F(t2-t1) loge (H1/H2)]

H1 0.577 m t1 30.000 mins

H2 0.286 m t2 120.000 mins



Permeability k= 4.E-07 m/sec

APPLiED GEOLOGY

Variable Head Permeability Test Data Sheet

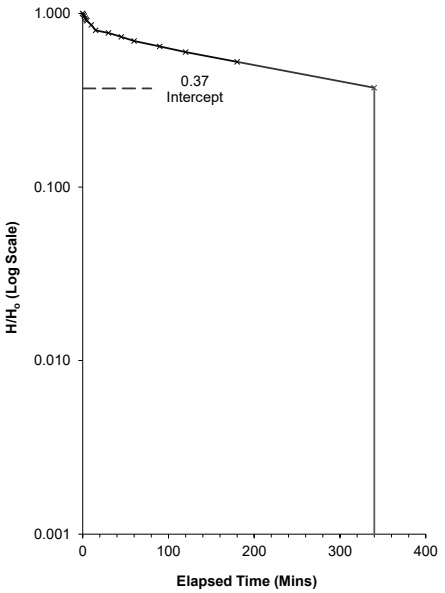
Job Name Fenland Education Campus

Job Number AG2927-18

Borehole No WS7

Field Data			
Elapsed Time (t) (mins)	Depth to water from top of casing or standpipe (m)	Head (H) (m)	Head Ratio (H/H_o)
0.0	0.30	1.50	1.000
1.0	0.32	1.48	0.987
2.0	0.35	1.45	0.967
3.0	0.39	1.41	0.940
4.0	0.42	1.38	0.920
5.0	0.44	1.36	0.907
10.0	0.51	1.29	0.860
15.0	0.60	1.20	0.800
30.0	0.64	1.16	0.773
45.0	0.70	1.10	0.733
60.0	0.76	1.04	0.693
90.0	0.83	0.97	0.647
120.0	0.90	0.90	0.600
180.0	1.01	0.79	0.527
340.0	1.25	0.56	0.373

Plot of H/H_o against Time



Permeability Results

Does Plot of Time vs Head Ratio go below H/Ho = 0.37? **Yes** *Use Basic Time Lag*
Yes *Use General Approach*

Basic Time Lag Approach:

k = A/FT

Basic Time Lag T= 340 mins

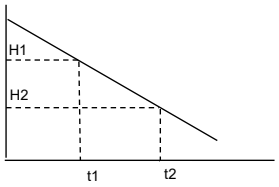
Permeability k= 5.E-08 m/sec

General Approach:

k = [A/F(t2-t1) loge (H1/H2)]

H1 0.8 m t1 15.000 mins

H2 0.527 m t2 180.000 mins



Permeability k= 4.E-08 m/sec

APPENDIX E – EXISTING SURFACE WATER DRAINAGE PLAN

NOTES:

1. This drawing is to be read in conjunction with all Peter Dann Consulting Engineers, Architects, MEP Engineers and Specialists drawings along with all relevant specifications.
2. All gridlines, building lines, etc. are to be set out in accordance with the relevant Architects drawings. Any discrepancies between the information given by the Engineer and that provided by others must be referred to the Architect before work proceeds.
3. Dimensions are NOT to be scaled from this drawing. If in doubt ask. Dimensions marked * are subject to confirmation by site measurement before construction commences.
4. All proprietary fixings shall be installed in accordance with the manufacturer's recommendations.
5. The Contractor shall comply with the health and safety requirements as set out by the CDM Regulations, THE HEALTH AND SAFETY EXECUTIVE.
6. All works are to be undertaken in accordance with the Building Regulations and latest relevant British Standards.
7. All construction products are to be CE marked in accordance with the Construction Products Regulation (EU) No. 305/2011.

LOW POINT

HIGH POINT

HIGH POINT

SEMH SITE REDLINE BOUNDARY

CATCHMENT 1

EXISTING: 1.88 ha

CATCHMENT 2

EXISTING: 4.67 ha

CATCHMENT 3

EXISTING: 1.90 ha

REV	DATE	DWN	CHK	DESCRIPTION
P01	13.08.21	SM	JB	Initial Preliminary Issue.

AMENDMENTS

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peter dann limited | newton house
cambridge road | barton | cambridge | CB23 7WJ
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JOB TITLE
Fenland Education Campus
SEMH

DRAWING TITLE
Existing Drainage Plan

DATE	DRAWN	CHECKED	SCALE
Aug '21	SM	JB	1:500 @A0

DRAWING STATUS	PDL JOB REF	CLIENT
PRELIMINARY	11-1124	KIER

KIER REF-ORIGINATOR-VOLUME-LEVEL-TYPE-ROLE-NUM	REV.	STATUS CODE
FEC-PDL-XX-ZZ-DR-C-2150	P01	S1

APPENDIX F – ANGLIAN WATER ASSET PLAN


Barn Owl Hovel
The Woodpeckers
Bawsey House
Victoria House
GADD'S LANE
The Orchard
Corita
Brook House
Track
THE STILL
Barton Farm
Track
Newlands
The Paddocks
BARTON ROAD
Glenmore
Peppermint House
Richmond House
Honeysuckle
Terracotta
Beech Cottage
Terracotta Barn
Willow Lodge
Fenfield
Castenea
The Gatehouse
Inglescombe
Laurel Cottage
168
Springfield
Nursery
Track
Depot
Track
130
144
142
132
135
133
129
BARTON ROAD
BARTON GREEN
Greenbushes
Kitchen Garden Cottage
Orchard Lodge
COX'S LANE
Sunnyside
Green Acres
Bramley House
3201
4201
4301
5301
5302
6301
6302
7301
5201
5202
5101
6101
6102
6001
175mm AC
225mm
600mm CO
0m
250m
500m
750m

(c) Crown copyright and database rights 2018 Ordnance Survey 100022432 | Date: 17/08/18 | Scale: 1:1250 | Map Centre: 544044,309501 | Data updated: 01/06/18 | Our Ref: 275898 - 1 | Wastewater Plan A0

Foul Sewer
Surface Sewer
Combined Sewer
Final Effluent
Rising Main*
Private Sewer*
Decommissioned Sewer*

Outfall*
Inlet*
Manhole*

Sewage Treatment Works
Public Pumping Station
Decommissioned Pumping Station

*(Colour denotes effluent type)

e.harte@peterdann.com
Fenland Educaio Cmpu

love every drop
anglianwater

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
3201	544337	309278	F	-	1.29	-
4201	544415	309293	F	-	0.99	-
4301	544495	309306	F	2.93	0.66	2.27
5101	544569	309190	F	-	0.13	-
5201	544520	309253	F	-	0.47	-
5202	544538	309229	F	2.58	0.33	2.25
5301	544543	309315	F	-	1.18	-
5302	544574	309318	F	2.94	1.01	1.93
6001	544686	309063	F	2.4	-0.64	3.04
6101	544604	309151	F	2.51	0.25	2.26
6102	544648	309103	F	-	-0.36	0.36
6301	544636	309323	F	-	0.82	-
6302	544664	309325	F	2.79	0.66	2.13
7301	544714	309318	F	-	0.39	-
7052	544739	309017	S	2.52	-0.49	3.01

APPENDIX G – DEVELOPMENT PROPOSALS

KEY

- **Existing trees** Retained and protected
- **Proposed trees**
- **Proposed hedges** with mesh fencee
- **Proposed Lawn**
- **Proposed Sports Field**
- **Proposed Planting**
- **Proposed Wildflower Meadow**
- **Proposed Asphalt concrete paving**
- **Proposed Paving Blocks**
- **Proposed Self-Binding Gravel**
- **In situ concrete**
- **Proposed Synthetic grass**
- **Logs from trees felled on site**

0 5 10 15 20 25 m

P06	*Trees and wildflower meadows added along Barton Road / access road, junction with Barton Road updated, swales updated, bollard and pumping station added*	TL	24.11.21
P05	*Updated to suit building layout*	TL	15.09.21
P04	*Planting adjusted to suit Lobby canopy*	TL	10.08.21
P03	*Path south of building widened to 2.4 for maintenance access, 2 disabled parking spaces relocated, substation indicated, Sensory garden planting reinstated, Horticulture garden added, grass around playing field changed to natural grass and raised bund indicated*	TL	02.08.21
P02	*Cycle storage added, gate to KS3 relocated, path south of building widened to 1.8 for maintenance access, 2 disabled parking spaces relocated*	TL	28.07.21
P01	*VE of Sensory garden,Community garden and Forest school*	TL	01.07.21

4128 FENLAND EDUCATION CAMPUS

FOR KIER EASTERN

SEMH Landscape Proposals

DRAWING NO: FEC-LEA-00-00 -DR-L-1002 **REVISION NO:** P06

Scale: 1:500 @ A1

Date: 24/11/2021

Status: S0

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