LISTERS GEO
Geotechnical and Geoenvironmental Consultants
Established 1992

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13th March 2024

Our Ref: 23.11.025

JPPC
Bagley Croft
Hinksey Hill
Oxford
OX1 5BD

For the attention of Matt Chadwick

Dear Matt

Groundwater Monitoring Investigation – Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Introduction
Following our previous Infiltration Investigation, reference 23.04.017 and dated May 2023, the Local Council requested further groundwater monitoring at the above site. These works have now been completed and the findings are presented below.

The previous investigation involved six machine excavated trial pits across the site and recorded seepages of groundwater between 0.9m and 1.6m depth. To allow a more detailed assessment of the likely worst-case groundwater regime, further monitoring was recommended during the Winter months.

Fieldworks
Three continuous tube boreholes were formed on the 13th December 2023. The logs for these boreholes and an Exploratory Hole Location Plan are enclosed.

The ground conditions encountered generally comprised Topsoil down to a typical depth of 0.3m depth onto River Terrace Deposits down to depths between 1.6m and 1.9m depth onto the Oxford Clay Formation down to the base of the boreholes at 3.0m depth.

The River Terrace Deposits were variable in nature, from fine-grained to coarse-grained. However, they generally comprised slightly gravelly slightly sandy clay down to 0.6m to 1.0m depth onto clayey sandy gravel down to depths between 1.1m and 1.9m. At two of the boreholes further slightly gravelly slightly sandy clay was encountered above the Oxford Clay Formation.

The Oxford Clay Formation soils generally comprised slightly sandy clay.

Groundwater strikes were encountered at each location at 1.0m depth, with standing water levels between 0.7m and 1.1m on completion.

The findings of this latest phase of investigations were similar to those from the previous investigation, however, at 0.7m to 1.1m depth compared to 1.7m depth, the standing water levels were shallower in the more recent investigation.

Monitoring
The Local Council had requested that if the groundwater levels during this investigation were above those from the previous investigation, then further monitoring should take place over the Winter. As noted above, the standing water levels recorded during this latest investigation were shallower than previous, and therefore groundwater monitoring has taken place monthly during the period following the investigation and March 2024. The results of this monitoring are enclosed and summarised below.

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Borehole Reference	Groundwater Strikes (m bgl)	Standing Water Levels (m bgl)			
		13/12/23	05/01/24	08/02/24	07/03/24
CT01	1.0	0.7	0.2	0.2	0.5
CT02	1.0	1.0	0.2	0.3	0.5
CT03	1.0	1.1	0.3	0.4	0.6

Conclusions
Based on the findings of this and the previous investigation it is considered the local groundwater level is variable depending on weather conditions and time of year. However, the monitoring carried out indicates the local groundwater level across the site is close to ground level during the winter months.

Hopefully the above is clear, however, should you have nay queries please contact the undersigned.

Yours sincerely

Mr. Lee Chippington
Associate Director
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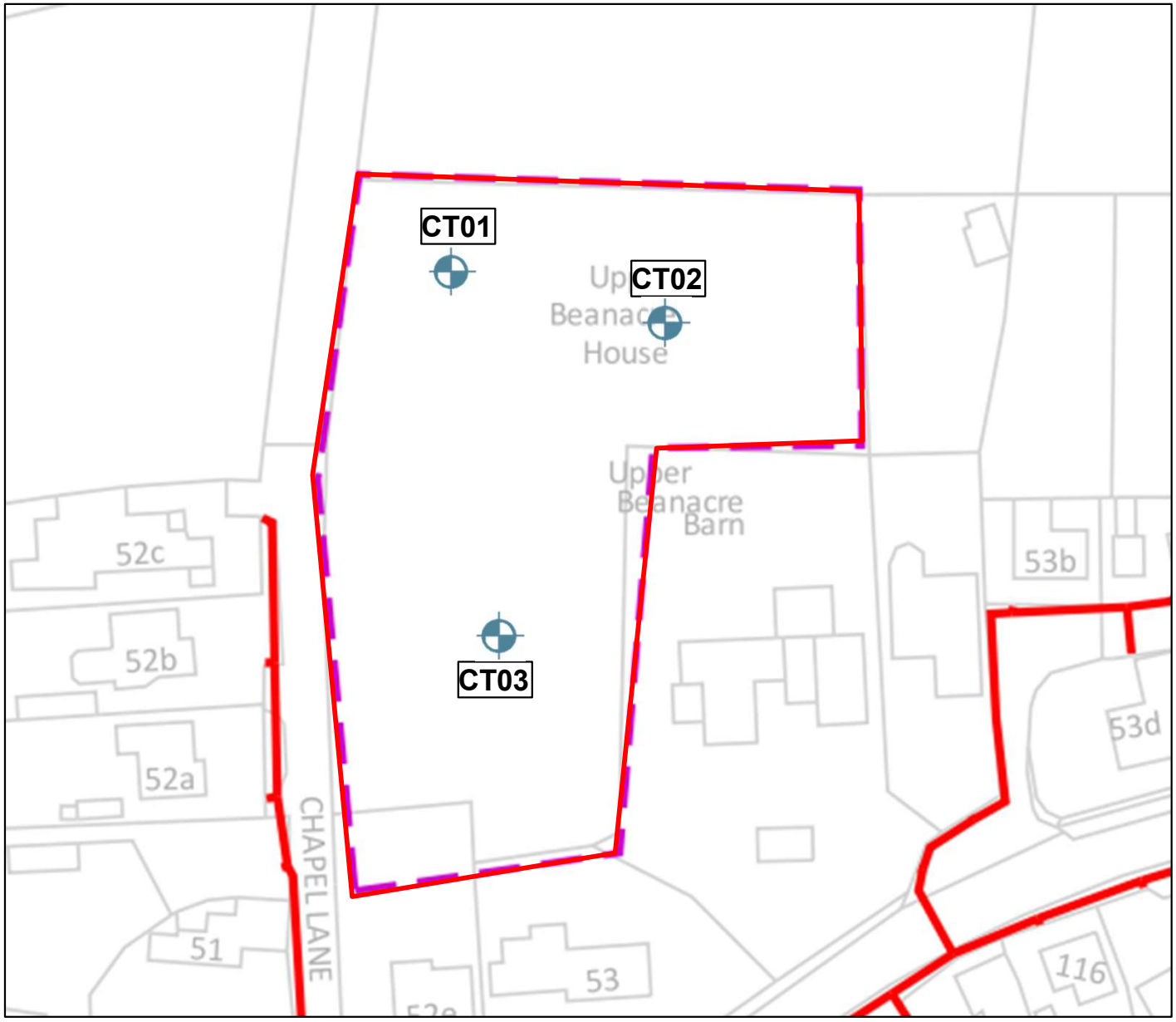
Enclosures:
Exploratory Hole Location Plan
Continuous Tube Borehole Logs (CT01 to CT03)
Groundwater Monitoring Results (05/01/24, 08/02/24 and 07/03/24)



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Title: Exploratory Hole Location Plan – Existing Site Layout

Key:

Continuous Tube Boreholes

Approximate Site Boundary

Site: Chapel Lane, Beanacre, SN12 7PZ

Scale: NTS	Job Number: 23.11.025	Drawn By: LC

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Continuous Tube Sampler Log

Borehole No. CT 01

Project Location: Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Co-ords: 390457E - 166469N

Level:

Dates: 13/12/2023

Project Number: 23.11.025

Logged By: Lee Chippington to BS 5930:2015

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Result				
		0.10	D					TOPSOIL Dark brown slightly sandy organic CLAY
		0.40	D		0.40			RIVER TERRACE DEPOSITS Brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to sub-angular flint
		0.60	D		0.60			RIVER TERRACE DEPOSITS Brown clayey sandy fine to coarse sub-rounded to sub-angular GRAVEL of flint
	▼	1.10	D		1.10			RIVER TERRACE DEPOSITS Stiff grey brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-rounded to sub-angular flint and chalk
		1.60	D		1.60			OXFORD CLAY FORMATION Stiff grey slightly sandy CLAY
		2.00	D					
		2.50	D					
					3.00			End of Borehole at 3.00m

1 2 3 4 5 6 7

Borehole Diameter: 87mm to 67mm

Groundwater: Water struck at 1.00m. On completion standing water level was 0.70m depth

Instrumentation:

Remarks:

ISO 9001 REGISTERED FIRM

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Continuous Tube Sampler Log

Borehole No. CT 02

Project Location: Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Co-ords: 390492E - 166460N

Level:

Dates: 13/12/2023

Project Number: 23.11.025

Logged By: Lee Chippington to BS 5930:2015

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Result	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					TOPSOIL Dark brown slightly sandy organic CLAY
		0.30	D		0.30			RIVER TERRACE DEPOSITS Brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub-rounded to sub-angular flint
		0.60	D					
	▼	0.80	D		0.80			RIVER TERRACE DEPOSITS Brown clayey sandy fine to coarse sub-rounded to sub-angular GRAVEL of flint
		1.50	D		1.50			RIVER TERRACE DEPOSITS Soft grey brown slightly gravelly sandy CLAY. Gravel is fine to medium sub-angular flint
		1.80	D		1.80			OXFORD CLAY FORMATION Stiff grey slightly sandy CLAY
		2.00	D					
		2.50	D					
					3.00			End of Borehole at 3.00m

1 2 3 4 5 6 7

Borehole Diameter: 87mm to 67mm

Groundwater: Water struck at 1.00m depth. On completion standing water level 1.00m depth

Instrumentation:

Remarks:

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Continuous Tube Sampler Log

Borehole No. CT 03

Project Location: Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Co-ords: 390458E - 166423N

Level:

Dates: 13/12/2023

Project Number: 23.11.025

Logged By: Lee Chippington to BS 5930:2015

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Result	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					TOPSOIL Dark brown slightly sandy organic CLAY
		0.30	D		0.30			RIVER TERRACE DEPOSITS Brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse sub-rounded to sub-angular flint
		0.60	D					
	▼	1.00	D		1.00			RIVER TERRACE DEPOSITS Brown clayey very sandy fine to coarse sub-rounded to sub-angular GRAVEL of flint
		1.50	D					
		1.90	D		1.90			OXFORD CLAY FORMATION Stiff grey slightly sandy CLAY
		2.50	D					
					3.00			End of Borehole at 3.00m

1 2 3 4 5 6 7

Borehole Diameter: 87mm to 67mm

Groundwater: Water struck at 1.00m depth. On completion standing water level 1.10m depth

Instrumentation:

Remarks:

QMS ISO 9001 REGISTERED FIRM

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Project:	Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Date:	05/01/2024	Ambient air temperature (°C):	-
Time:	11.30	Barometric pressure (mB):	-
Recorded by:	PH	Barometric trend:	-
Equipment:	Dipmeter	Weather conditions:	Dry

Groundwater monitoring

Hole ID	Ground level (mAOD)	Water depth (m)	Water level (mAOD)	Depth of pipe base (m)	Remarks
CT01		0.20		3.00	
CT02		0.20		3.00	
CT03		0.30		3.00	

Gas monitoring

Hole ID	Methane CH_4 (%v/v)	Carbon Dioxide CO_2 (%v/v)	Oxygen O_2 (%v/v)	Flow Rate (l/h)	Well Pressure (mBar)	PID* (ppm)	Remarks

Note: See Exploratory Hole log for well details

SUMMARY OF GROUNDWATER MONITORING - 05.Jan.24	**Report No.** 23.11.025

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Project:	Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Date:	08/02/2024	Ambient air temperature (°C):	-
Time:	12:15	Barometric pressure (mB):	-
Recorded by:	PH	Barometric trend:	-
Equipment:	Dipmeter	Weather conditions:	Dry

Groundwater monitoring

Hole ID	Ground level (mAOD)	Water depth (m)	Water level (mAOD)	Depth of pipe base (m)	Remarks
CT01		0.20		3.00	
CT02		0.30		3.00	
CT03		0.40		3.00	

Gas monitoring

Hole ID	Methane CH_4 (%v/v)	Carbon Dioxide CO_2 (%v/v)	Oxygen O_2 (%v/v)	Flow Rate (l/h)	Well Pressure (mBar)	PID* (ppm)	Remarks

Note: See Exploratory Hole log for well details

SUMMARY OF GROUNDWATER MONITORING - 08.Feb.24	**Report No.** 23.11.025

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Project:	Chapel Lane, Beanacre, Melksham, Wiltshire, SN12 7PZ

Date:	07/03/2024	Ambient air temperature (°C):	-
Time:	13:15	Barometric pressure (mB):	-
Recorded by:	PH	Barometric trend:	-
Equipment:	Dipmeter	Weather conditions:	Dry

Groundwater monitoring

Hole ID	Ground level (mAOD)	Water depth (m)	Water level (mAOD)	Depth of pipe base (m)	Remarks
CT01		0.50		3.00	
CT02		0.50		3.00	
CT03		0.60		3.00	

Gas monitoring

Hole ID	Methane CH_4 (%v/v)	Carbon Dioxide CO_2 (%v/v)	Oxygen O_2 (%v/v)	Flow Rate (l/h)	Well Pressure (mBar)	PID* (ppm)	Remarks

Note: See Exploratory Hole log for well details

SUMMARY OF GROUNDWATER MONITORING - 07.Mar.24	**Report No.** 23.11.025