

F.A.O Ken Brown
Medmerry Park Limited
29-30 Watling Street
Top Floor
Canterbury
Kent
CT1 2UD

Our Ref: SHF.245.002.GE.L.002.A
Date: 12th June 2019

Dear Ken,

MEDMERRY PARK HOLIDAY VILLAGE –GROUND WATER LEVEL ASSESSMENT

Enzygo Ltd. [Enzygo] were employed by Medmerry Park Ltd. [the Client] to undertake groundwater monitoring at the site of a proposed development for additional holiday lodges at Medmerry Park Holiday Village. This letter report provides an assessment of the encountered groundwater conditions and results of monitoring undertaken and should be read in conjunction with SHF.245.002.GE.L.001.A – Soakaway Letter Report.

Geology

With reference to the British Geological Survey (BGS) website¹, the south and west of site is indicated to be underlain by River Terrace deposits (Sand, Silt and Clay) and Raised Beach deposits (Sand and Gravel) with Raised Marine deposits (Clay, Silt, Sand and Gravel) present in the northwest/southeast. The underlying solid strata across majority of site is the Earnley Sand Formation (Sand, Silt and Clay) with the Wittering Formation (Sand, Silt and Clay) located to the north onsite.

With reference to the aquifer designation, taken from Magic.gov.uk website², the superficial deposits are all classified as Secondary A aquifers.

Ground Investigation

The ground investigation was undertaken between the 25th to 27th February 2019 comprised six window sample boreholes (WS01 – WS06), one of which (WS01) was installed with a data logger, taking hourly readings for three months of the groundwater levels.

The window sample boreholes were positioned around site to provide coverage with an install in the approximate centre of site for groundwater monitoring.

The exploratory hole locations are shown on the exploratory hole location plan referenced, SHF.245.002.GE.DR.001, which is appended to this report.

Ground Conditions

Typical ground and groundwater conditions have been assessed by Enzygo using the available data and are summarised below. Full details of the ground and groundwater conditions encountered during the works are given on the exploratory hole records appended to this letter report and are summarised in further detail in the section below.

¹ The British Geological Survey, www.bgs.ac.uk (Date accessed June 2019)

² The Magic website, www.magic.gov.uk (Date accessed June 2019)

Table 1: Summary of Ground and Groundwater Conditions

Strata	Summary Description	Depth (m)
Made Ground	Topsoil	0.00 to 0.30
	Firm consistency pale brown sandy gravelly clay	0.30 to 0.60
Superficial	Very soft to stiff consistency grey green/grey brown/orange brown sandy gravelly clay	0.20 to 3.45
	Green grey/orange brown silty clayey fine to medium sand	2.00 to 4.45
Groundwater	Noted in WS06	3.30

Made Ground

Made Ground was encountered across the site from ground level to typically 0.30m below existing ground level (begl) comprising topsoil underlain by reworked clayey deposits from 0.30 to 0.60m begl.

Superficial Deposits

Natural deposits were generally consistent with the published BGS information and varied in thickness across site and comprised of interbedded cohesive and granular strata to a maximum depth of 4.45m begl.

Bedrock

Bedrock was not encountered.

Groundwater

Groundwater seepage was encountered at a depth of 3.30m begl (WS06).

Groundwater Monitoring Results

The groundwater monitoring was undertaken between the 8th March and 7th June 2019 using a data level logger and the groundwater levels were recorded hourly.

The monitoring showed an approximate 0.35m change in level over the three months ranging from 0.85m begl to 1.20m begl. (Refer to groundwater level graph, which is appended.)

Conclusions

The results of the groundwater monitoring confirm the findings of the soakaway testing, reported in our letter report, SHF.245.002.GE.L.001.A. Groundwater levels are too shallow for viable soakaway drainage and alternative methods of drainage should be utilised.

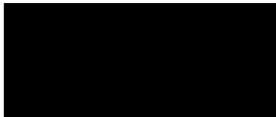
If you have any queries, or require further information, please do not hesitate to contact the undersigned.

Yours sincerely,



Deanna Leedle – [BSc, \(Hons\), FGS](#).
Graduate Geo-Environmental Engineer

Reviewed by,



Nick Brook – [BSc \(Hons\), FGS](#)
Senior Consultant

ENCL.

SHF.245.002.GE.DR.001 – Exploratory Hole Location Plan
Borehole Logs
Ground Water Level Over Three Months Graph



NOTES

1. Do not scale from this drawing.
2. All dimensions are in meters.
3. This drawing is to be read in conjunction with all relevant documentation.
4. All surveyed information including levels and layout is provided by others.
5. All existing and proposed dimensions, levels and locations to be checked and verified by the main contractor on site prior to the commencement of the works and any anomalies reported to the engineer.

Key:

- Site Boundary
- WS* Window Sample location with Installation
- WS Window Sample Location
- TP Soakaway Pit location

P02	25/03/19	Amendments	NB	SD	SD
P01	06/02/19	First Issue	NB	SD	SD
REV:	DATE:	DETAIL:	DES:	CHK:	APP:



Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT:

Medmerry Park Limited

PROJECT:

Medmerry Park

DRAWING TITLE:

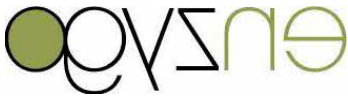
Exploratory Hole Location Plan

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
NB	NB	SD	SD

DATE:	SCALE @ A3:
06/02/19	Not to Scale

PROJECT NO.:	DRAWING NO.:
SHF.245.002	001

DRAWING STATUS:	ISSUE:
FOR INFORMATION	P02



Site Medmerry Park Holiday Village			WS01
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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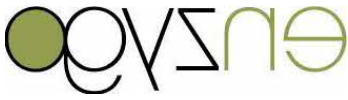
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
							MADE GROUND: Firm consistency brown slightly sandy slightly gravelly clayey topsoil. Gravel is subrounded fine to medium of chert. Sand is fine to coarse. 0.00 - 0.30 Many rootlets.	0	
				0.30			MADE GROUND: Firm consistency brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of chert, flint and brick. Sand is fine to coarse.		
				0.60			Firm grey/orange brown slightly gravelly sandy CLAY. Gravel is subrounded fine to coarse of flint. Sand is fine to coarse.		
			1.00 - 1.45	C	N 11	1.40		Soft green/orange brown very sandy CLAY. Sand is fine to coarse. 1.40 - 3.50 Pockets of clayey fine to medium sand.	1
			2.00 - 2.45	C	N 7			2.00 - 3.00 Locally blue green.	2
		3.00 - 3.45	C	N 7				3	
		4.00 - 4.45	C	N 12	3.50		3.50 - 4.00 Pockets of sand. Firm dark grey silty CLAY.	4	
					4.45 (4.45)		Borehole completed at 4.45m.		

General Remarks

- Dynamic sampling using a tracked percussive sampling rig to 4.45m due to reaching required depth.
- Groundwater was not encountered.
- Log completed in accordance with BS5930:2015.
- Borehole was installed with 1.00m plain pipe and 3.0m slotted pipe.
- Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINT STD AGS 3 - 1.ENZYGO.GPJ 26/3/19



Site Medmerry Park Holiday Village			WS02
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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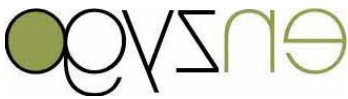
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.30		MADE GROUND: Soft consistency brown slightly gravelly slightly sandy clayey topsoil. Gravel is subangular to subrounded fine to coarse of flint. Sand is fine to coarse. 0.00 - 0.30 Many rootlets.	0	
		1.00 - 1.45	C	N 4	1.00		Soft consistency pale brown/orange brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse of flint. Sand is fine to coarse.		
		2.00 - 2.45	C	N 8			Soft grey brown/orange brown slightly sandy CLAY. Sand is fine to coarse. 1.00 - 3.45 Locally very sandy.	1	
		3.00 - 3.45	C	N 6	3.45				2
				{4.45}			Borehole completed at 3.45m.	3	
								4	

General Remarks

1. Dynamic sampling using a tracked percussive sampling rig to 3.45m due to collapse.
2. Groundwater was not encountered.
3. Log completed in accordance with BS5930:2015.
4. Borehole was backfilled with arisings.
5. Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINTI STD AGS 3 - 1.ENZYGO.GPJ 26/3/19



Site Medmerry Park Holiday Village			WS03
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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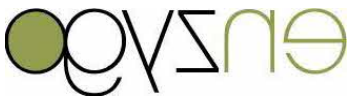
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.25		MADE GROUND: Soft consistency brown slightly sandy clayey topsoil. Sand is fine to coarse. 0.00 - 0.25 Many rootlets.	0	
		1.00 - 1.45	C	N 8	1.50		Soft pale brown/orange brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine to coarse of flint. Sand is fine to coarse.	1	
		2.00 - 2.45	C	N 9	2.00		Soft consistency green grey/orange brown slightly gravelly sandy CLAY with a low cobble content of flint. Gravel is subangular to subrounded fine to coarse of flint. Sand is fine to coarse.	2	
		3.00 - 3.45	C	N 21	3.45		Loose to medium dense green grey/orange brown very silty fine to medium SAND.	3	
					{4.45}		Borehole completed at 3.45m.	4	

General Remarks

- Dynamic sampling using a tracked percussive sampling rig to 3.45m due to collapse.
- Groundwater was not encountered.
- Log completed in accordance with BS5930:2015.
- Borehole was backfilled with arisings.
- Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINT STD AGS 3 - 1.ENZYGO.GPJ 26/3/19



Site Medmerry Park Holiday Village			WS04
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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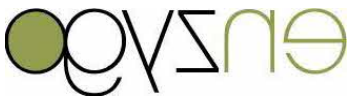
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.50		MADE GROUND: Orange brown slightly clayey very sandy gravel. Gravel is subrounded fine to coarse of chert. Sand is fine to coarse.	0	
		1.00 - 1.45	C	N 3	1.40		Very soft pale brown/orange brown sandy CLAY. Sand is fine to coarse.	1	
		2.00 - 2.45	C	N 9	2.00		Soft consistency dark grey/blue grey very sandy CLAY. Sand is fine to coarse. 1.40 - 2.00 Occasional decaying organic fragments.	2	
		3.00 - 3.45	C	N 17	3.45		Loose to medium dense pale brown/orange brown very clayey fine to medium SAND. 2.00 - 3.45 Pockets of firm thinly laminated sandy clay.	3	
					{4.45}		Borehole completed at 3.45m.	4	

General Remarks

- Dynamic sampling using a tracked percussive sampling rig to 3.45m due to collapse.
- Groundwater was not encountered.
- Log completed in accordance with BS5930:2015.
- Borehole was backfilled with arisings.
- Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINTI STD AGS 3 - 1.ENZYGO.GPJ 26/3/19



Site Medmerry Park Holiday Village			WS05
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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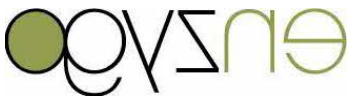
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.30		MADE GROUND: Firm consistency brown slightly gravelly sandy clayey topsoil. Gravel is subangular to subrounded fine to coarse of flint and chert. Sand is fine to coarse.	0	
					0.80		MADE GROUND: Firm consistency pale brown slightly sandy gravelly clay. Gravel is subangular fine to coarse of flint. Sand is fine to coarse.		
		1.00 - 1.45	C	N 15	1.00		Firm consistency dark grey slightly sandy silty CLAY. Sand is fine to coarse. 0.80 - 1.00 Occasional pockets of green sand.	1	
		2.00 - 2.45	C	N 12			Firm grey green/orange brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of flint and chert. Sand is fine to coarse.	2	
	3.00 - 3.45	C	N 17		3.45			3	
					{4.45}		Borehole completed at 3.45m.	4	

General Remarks

1. Dynamic sampling using a tracked percussive sampling rig to 3.45m due to collapse.
2. Groundwater was not encountered.
3. Log completed in accordance with BS5930:2015.
4. Borehole was backfilled with arisings.
5. Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINT STD AGS 3 - 1.ENZYGO.GPJ 26/3/19



Site Medmerry Park Holiday Village			WS06
Job No SHF.245.002	Dates Start 27-02-19 Finish 27-02-19	Ground Level (m) Co-Ordinates	

Client Medmerry Park Ltd.	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
							MADE GROUND: Firm consistency brown slightly gravelly sandy clayey topsoil. Gravel is subangular to subrounded fine to medium of flint. Sand is fine to coarse.	0	
		1.00 - 1.45	C	N 8			Soft pale brown/orange brown slightly sandy CLAY. Sand is fine to coarse. 0.20 - 2.00 Occasional pockets of clayey sand.	1	
		2.00 - 2.45	C	N 9	2.00				2
		3.00 - 3.45	C	N 10				Soft to firm pale brown/orange brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded of flint. Sand is fine to coarse.	3
	▽	4.00 - 4.45	C	N 17	4.45 (4.45)			3.30 Strata becomes very wet. Medium Dense green grey/orange brown slightly gravelly very clayey fine to medium SAND. Gravel is subangular to subrounded fine to coarse of flint.	4
								Borehole completed at 4.45m.	

General Remarks

- Dynamic sampling using a tracked percussive sampling rig to 4.45m due to reaching required depth.
- Wet strata encountered at 3.30m begl.
- Log completed inaccordance with BS5930:2015.
- Borehole was backfilled with arisings.
- Coordinates and levels were not obtained.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
	27/02/19	3.30		

1.0.ENZYGO BH LOG SHF.245.002 LOGS ATTEMPT 4.GPJ GINT STD AGS 3.1 ENZYGO.GPJ 26/3/19

Ground Water Level Over Three Months

