RichardJackson
Engineering Consultants

Our Ref: SB/61647/SLR
Your Ref:

03 May 2022

Mark Roberts
Chapter Build Group Ltd
1 Pound Avenue
Stevenage
SG1 3JB

BY EMAIL ONLY TO:
Info@cbgroup.ltd

Dear Mark

Re: Home Farm, Bedfield – Infiltration Assessment

As you are aware we recently attended the above site to undertake infiltration testing to assess the suitability of the site for infiltration drainage. The findings of this testing are summarised in this letter and shall be read in accordance with our limitations of investigation, which are enclosed.

Project Understanding

It is our understanding that the proposed development is to comprise the construction of 7no. new residential dwellings following the demolition of on-site structures. A proposed Site Layout Plan is enclosed from Hollins Architects, Surveyors, and Planning Consultants as drawing reference 20164 100 rev E.

Site Location & Description

The site was located Home Farm, Earl Soham Road Bedfield, IP13 7EE. At the time of investigation, the site comprised a former engineering works including several workshop structures and associated concrete paving. A site location plan is presented as Figure 1 and is enclosed.

Fieldwork

The fieldwork on which this letter is based was undertaken between 28 March 2022 and 30 March 2022 and comprised the mechanical excavation of 2no. trial pits (TP01 & TP02). An exploratory hole location plan is enclosed as Figure 2 and indicates the location of the trial pits with respect to the existing site layout.

Disturbed samples were recovered from throughout the depth of each exploratory hole for record keeping purposes. The exploratory hole logs are enclosed and give descriptions and depths of strata encountered, together with details of samples taken and other relevant information.

Soakage tests were undertaken in the 2no. trial pit locations in accordance with BRE Digest 365 (2016).

Cont'd.../

Where applicable, investigation techniques, sampling and logging of soils complied with the requirements of British Standard BS:5930:- 'Code of Practice for Site Investigations' (2015).

Trial Pitting

A mechanical excavator was used to form 2no. trial pits to depths of 2.04m below ground level (bgl) (TP01) and 2.05m respectively (TP02). Trial pits were positioned to provide representative coverage of the site.

Infiltration Testing

Infiltration testing was undertaken in the trial pits in accordance with current guidance as given in BRE Digest 365 'Soakaway Design' (2016).

The trial pits were filled with clean water from a water tanker and the fall in water level in the trial pits was monitored at regular intervals. Repeat tests were not undertaken due to the observed poor infiltration.

Infiltration rates have not been determined for the encountered soils due to the insufficient observed infiltration. Table 1, provides a summary of the duration of monitoring and the observed change in water level. Full results of the infiltration testing are enclosed.

Table 1: Summary of Infiltration Tests

Exploratory Hole	Monitoring Period Duration (mins)	Observed change in water level (m)
TP01	1440	+0.03
TP02	1440	+0.01

<u>Ground Conditions</u>

This investigation encountered the following sequence of strata from ground level:

- Concrete
- Made Ground
- Topsoil
- Subsoil
- Lowestoft Formation

Concrete

Concrete surfacing was encountered from the surface to a maximum proven depth of 0.12m bgl in TP01.

Made Ground

Soils interpreted to represent the made ground were encountered from beneath the concrete in TP01 to a depth of 0.25m bgl. The made ground was typically encountered as a brown sandy gravel of fine to coarse flint with brick, concrete, wood, metal and concrete fragments.

Cont'd.../

Topsoil

Soils interpreted to represent topsoil were encountered from ground level in TP02 to a depth of 0.20m bgl. The made ground was typically encountered as a dark brown clay with plant matter.

Subsoil

Soils interpreted to represent the subsoil were encountered from beneath the made ground in TP01 to a depth of 1.10m bgl and beneath the topsoil in TP02 to a depth of 0.55m bgl. The subsoil was typically encountered as a very soft to soft grey sandy silty clay with decayed wood fragments.

Lowestoft Formation

Soils interpreted to represent the Lowestoft Formation were encountered from beneath the subsoil to the maximum depth of this investigation at 2.05m in TP02. The clay was typically encountered as a stiff light brown light grey sandy gravelly clay. The gravel was subrounded fine to coarse chalk and flint.

Groundwater

Groundwater was not encountered during this investigation.

Summary

On the basis of the findings of this investigation, the Lowestoft Formation is not considered an appropriate stratum for the adoption of infiltration drainage. Alternative methods of surface water disposal should be investigated.

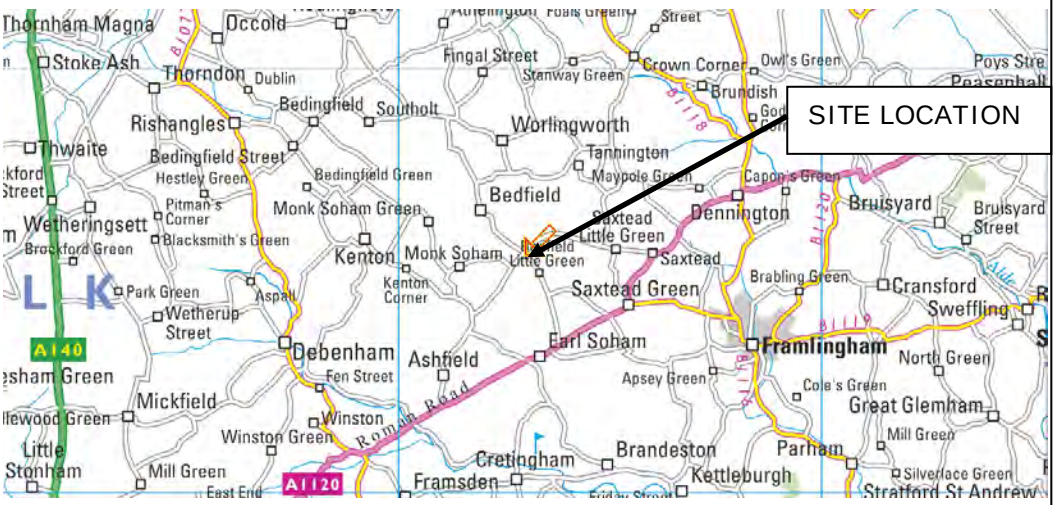
General

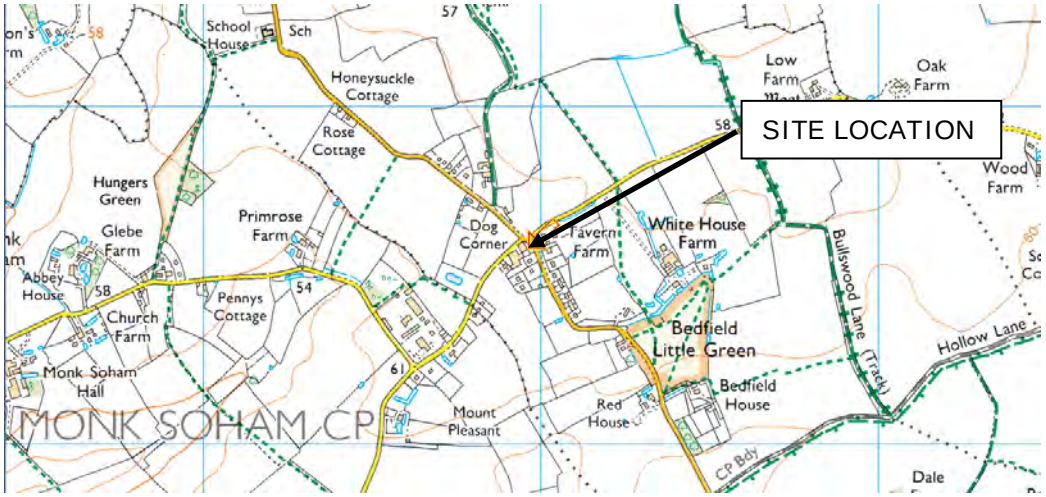
We trust that the above and enclosed are clear and acceptable, however, should you have any questions or queries please do not hesitate to contact us.

Yours sincerely

Scott Bolton
Graduate Geotechnical Engineer
on behalf of Richard Jackson Limited

Enc Figure 1 – Site Location Plan
Figure 2 – Exploratory Hole Location Plan
Hollins Proposed Site Layout Plan
Exploratory Hole Logs
Soakage Tests Calculations
Limitations of Investigation





REPRODUCED FROM ORDNANCE SURVEY MAP WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE, © CROWN COPYRIGHT RICHARD JACKSON LTD – ACC No. 100002572

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Tel: 01206 228 800

Home Farm, Bedfield, IP13 7EE

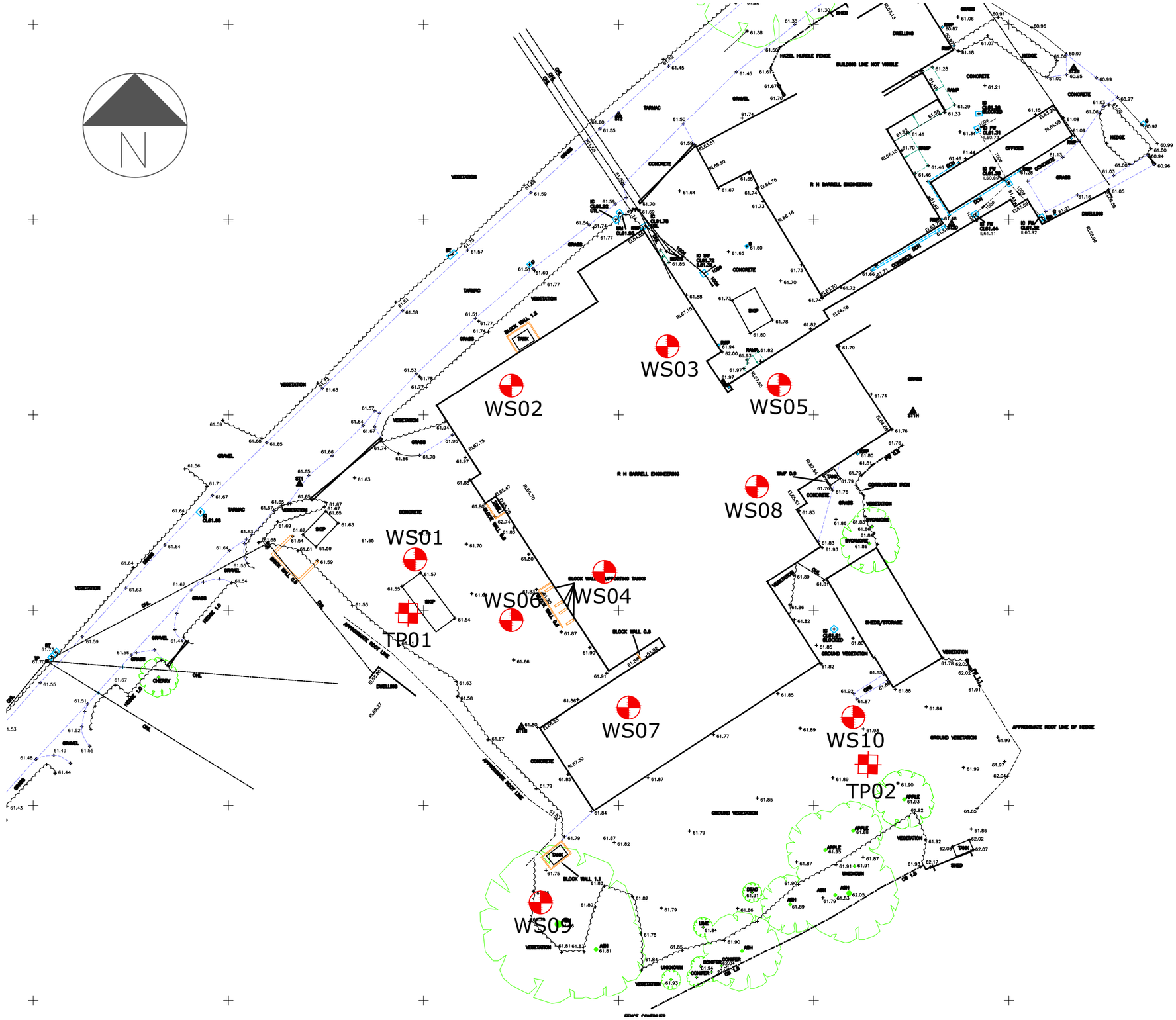
FIGURE 1

SITE LOCATION PLAN

SCALE: N.T.S.

JOB NO: 61647

DO NOT SCALE



KEY

INFILTRATION TEST LOCATIONS (TP01-TP02)

WINDOWLESS SAMPLER LOCATIONS (WS01-WS10)

REV	DATE	DESCRIPTION	DRAWN	CHKD

REVISIONS

This drawing is to be read in conjunction with all other Engineer's drawings and all other project information. Any discrepancy between the Engineer's drawings and other project information is to be reported to the Engineer immediately.

Project
HOME FARM, BEDFIELD

Title
EXPLORATION HOLE LOCATION PLAN

Client
CHAPTER BUILD GROUP LTD

Scale	Drawn	Date
1:250 @ A3	MB	04/04/22
Job Manager	Checked	Approved
KO	GB	GB

RichardJackson Engineering Consultants

847 The Crescent, Colchester, Essex CO4 9YQ Tel: 01206 228800
Unit 06C130, 6th Floor, 1 St. Katherine's Way, London, E1W 1UN Tel: 020 7448 9916
5 Queen House, Mill Court, Great Shelford, Cambs CB22 5LD Tel: 01223 314794
4 The Old Church, St. Matthews Road, Norwich, Norfolk NR1 1SP Tel: 01603 230240
The Wheelhouse, Bonds Mill, Stonehouse, Gloucestershire GL10 3RF Tel: 01172 020070

Email Address: mail@rj.uk.com Website: http://www.rj.uk.com

Drawing No.
61647-G-FIG02

Revision

Drawing Status

☒ INFORMATION ☐ APPROVAL ☐ COSTING
☐ TENDER ☐ CONSTRUCTION ☐ AS CONSTRUCTED

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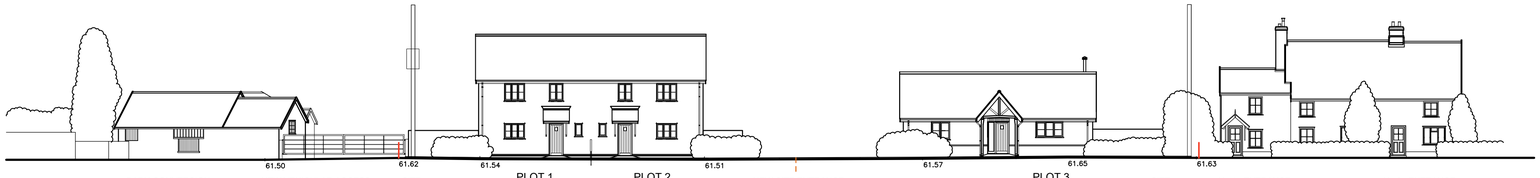

PROPOSED STREET ELEVATION 1/200 SCALE

0 0 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m 15m 20m Scale Bar

LANDSCAPING KEY:

- Tarmac Entrance
- 1.8m Close Boarded Fence
- New Grass
- Patio Paving Slabs
- Permeable Driveways and Hardstandings
- Refuse Bins
- New Trees
- New Planting
- Existing Hedge Retained.
- Feature / Building Removed
- Shed 3m²
- Electric Vehicle Changing Point EVCP

Overall Site Area 3498 m2 / 0.35 ha

PLOT no 1	2 Storey	3 Bedroom Semi - Detached House	97 sq/m	2 Car Parking Spaces
PLOT no 2	2 Storey	3 Bedroom Semi - Detached House	97 sq/m	2 Car Parking Spaces
PLOT no 3	1 Storey	3 Bedroom Detached Bungalow	95 sq/m	2 Car Parking Spaces
PLOT no 4	2 Storey	3 Bedroom Detached House	122 sq/m	2 Car Parking Spaces
PLOT no 5	2 Storey	4 Bedroom Detached House	145 sq/m	2 Car Parking Spaces
PLOT no 6	2 Storey	4 Bedroom Detached House	142 sq/m	2 Car Parking Spaces
PLOT no 7	1 Storey	3 Bedroom Detached Bungalow	96 sq/m	2 Car Parking Spaces

PROPOSED SITE LAYOUT PLAN 1/200 SCALE

0 0 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m 15m 20m Scale Bar

No.	Date	Revisions
E	JULY 21	REVISED TO SUIT PLANNERS COMMENTS
D	JULY 21	PLOT no 4 REVISED AND MOVED
C	JULY 21	VISION SPLAYS - ADDITIONAL INFORMATION ADDED
B	JUNE 21	PLANNING APPLICATION
A	MAY 21	CLIENT REVISIONS

Revisions

HOLLINS
Architects, Surveyors & Planning Consultants
The Guildhall
Market Hill
Framlingham
Suffolk
IP13 9BD
Telephone 01728 723959
E mail all@hollins.co.uk
Website www.hollins.co.uk

Client
NORTAN PROPERTIES

Site
BUILDINGS AT HOME FARM
BEDFIELD
WOODBRIDGE
SUFFOLK IP13 7EE

Project
REDEVELOPMENT OF HOME FARM WORKS

Details
PROPOSED SITE LAYOUT PLAN

Scale
1/200 scale @ A1 Sheet

Date
JANUARY 2021

Drawn by
JR

Drawing number
20164 100 rev E

This drawing is copyright. This drawing must not be scaled. Before commencing any work the contractor must set out and check all dimensions on site. This drawing to be read in conjunction with any consultants details. Any discrepancies must be reported to Hollins Architects & Surveyors.

RichardJackson Engineering Consultants

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Trial Pit No. **TP01** Sheet 1 of 1

Project Name: Home Farm	**Project No.** 61647	**Co-ords:**	Date **28/03/2022**
		Orientation:	**Dimensions (m)**
Location: Earl Soham Road, Bedfield, IP13 7EE		**Level (m, aOD):**	1.50 × 0.30 — Scale **1:20**
Client: Chapter Build Group Ltd		**Depth (m):** 2.04	Logged **TS**

Ground water	Samples & In Situ Testing: Depth	Type	Results	Level (m)	Depth (m)	Legend	Stratum Description
					0.12		CONCRETE
					0.25		Brown sandy GRAVEL of subangular to subrounded fine to coarse flint with brick, concrete, wood, metal and concrete fragments. With alluvial odour. MADE GROUND
	0.50	D1					Very soft greenish grey silty CLAY with decayed wood fragments.
	0.75	IVN	13				
					1.10		Stiff light grey mottled light brown gravelly CLAY. Gravel of subrounded fine to coarse chalk. LOWESTOFT FORMATION
	1.40	D2					
	2.00	D3					
					2.04		End of Pit at 2.040m

Groundwater: Groundwater not encountered.

Stability: Pit sides stable.

Remarks: Infiltration test undertaken between 0.90and 2.04m.

Key

D	Disturbed	**IVN**	Hand Vane
B	Bulk	**PID**	PID Reading
ES	Environmental	**PP**	Pocket Penetrometer
	Groundwater strike		Standing water level

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Trial Pit No. **TP02** Sheet 1 of 1

Project Name: Home Farm	**Project No.** 61647	**Co-ords:**	Date **28/03/2022**
Location: Earl Soham Road, Bedfield, IP13 7EE		**Orientation:**	**Dimensions (m)** 1.50 × 0.30
Client: Chapter Build Group Ltd		**Level (m, aOD):**	Scale **1:20**
		Depth (m): 2.05	Logged **TS**

Ground water	Samples & In Situ Testing: Depth	Type	Results	Level (m)	Depth (m)	Legend	Stratum Description
					0.20		Grass over a dark brown CLAY. TOPSOIL
							Soft brown mottled light grey silty CLAY.
	0.50	D1			0.55		
	0.60	D2					Soft light grey mottled light brown sandy CLAY.
	0.70	IVN	71		0.70		Stiff light brown mottled light grey gravelly CLAY. Gravel is subrounded fine to coarse chalk and occasional flint. LOWESTOFT FORMATION
	1.00	D3					*...becoming more greyish brown with depth from 1.00m*
							...becoming more stiff from 1.40m
							...pocket of orangish brown clayey medium sand at 1.60m
	2.00	D4			2.05		End of Pit at 2.050m

Groundwater: Groundwater not encountered.

Stability: Pit sides stable.

Remarks: Infiltration test undertaken between 0.91m and 2.05m.

Key

D	Disturbed	**IVN**	Hand Vane
B	Bulk	**PID**	PID Reading
ES	Environmental	**PP**	Pocket Penetrometer
▽	Groundwater strike	▼	Standing water level

Soil Infiltration Rate (f) = Vp_{75-25} / (ap_{50} * tp_{75-25})

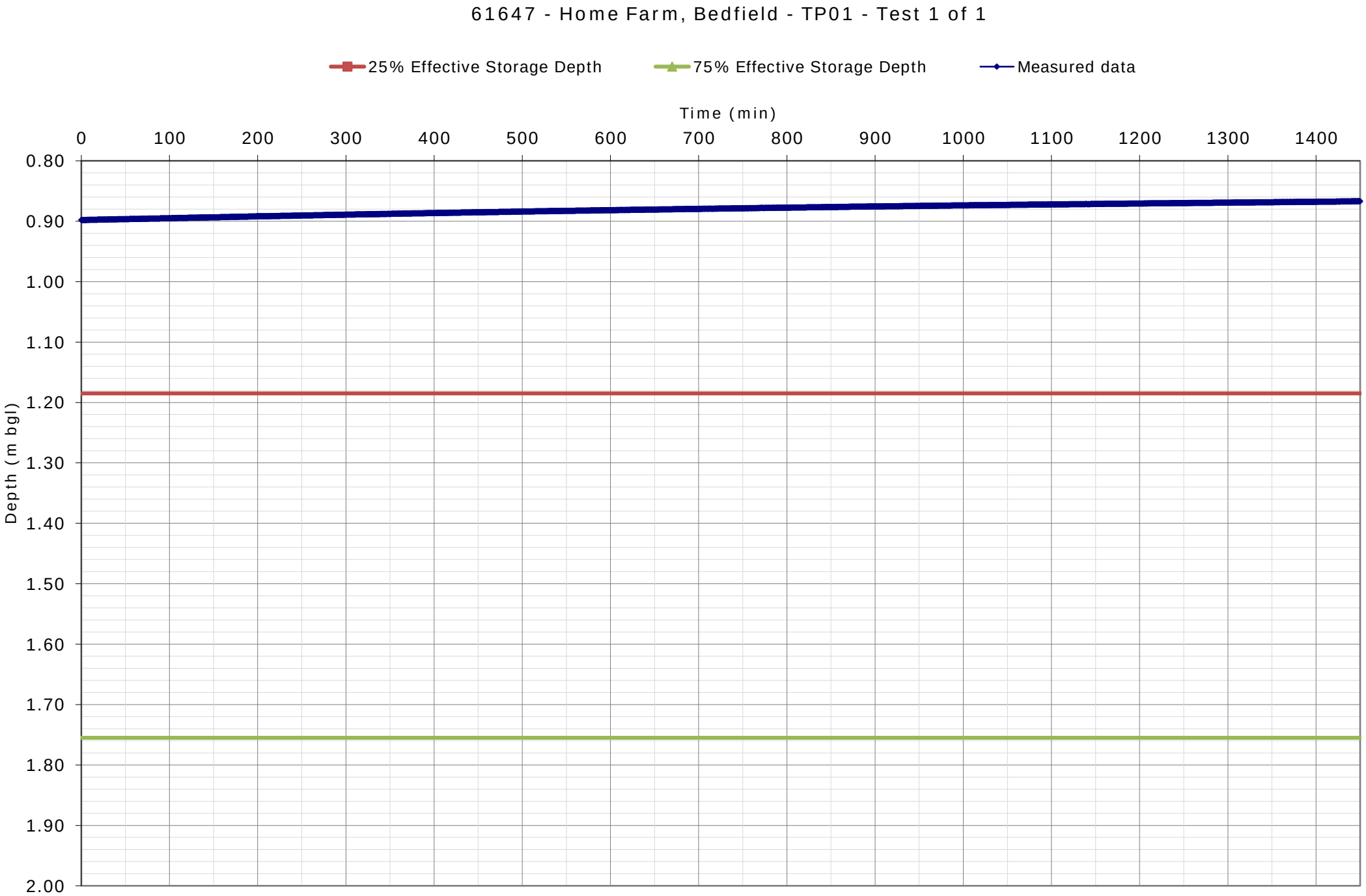
Infiltration TP01 - Test 1 of 1 Date: 28/03/2022	
Trial Pit Dimensions	
Length (m)	1.50
Width (m)	0.30
Depth (m)	2.04
Effective Depth (m)	1.14
$tp_{75\ (mins)}$	Not Achieved
$tp_{25\ (mins)}$	Not Achieved
Calculations	
Vp_{75-25} ap_{50} tp_{75-25}	Insufficient infiltration to undertake calculation
f =	N/A m/s

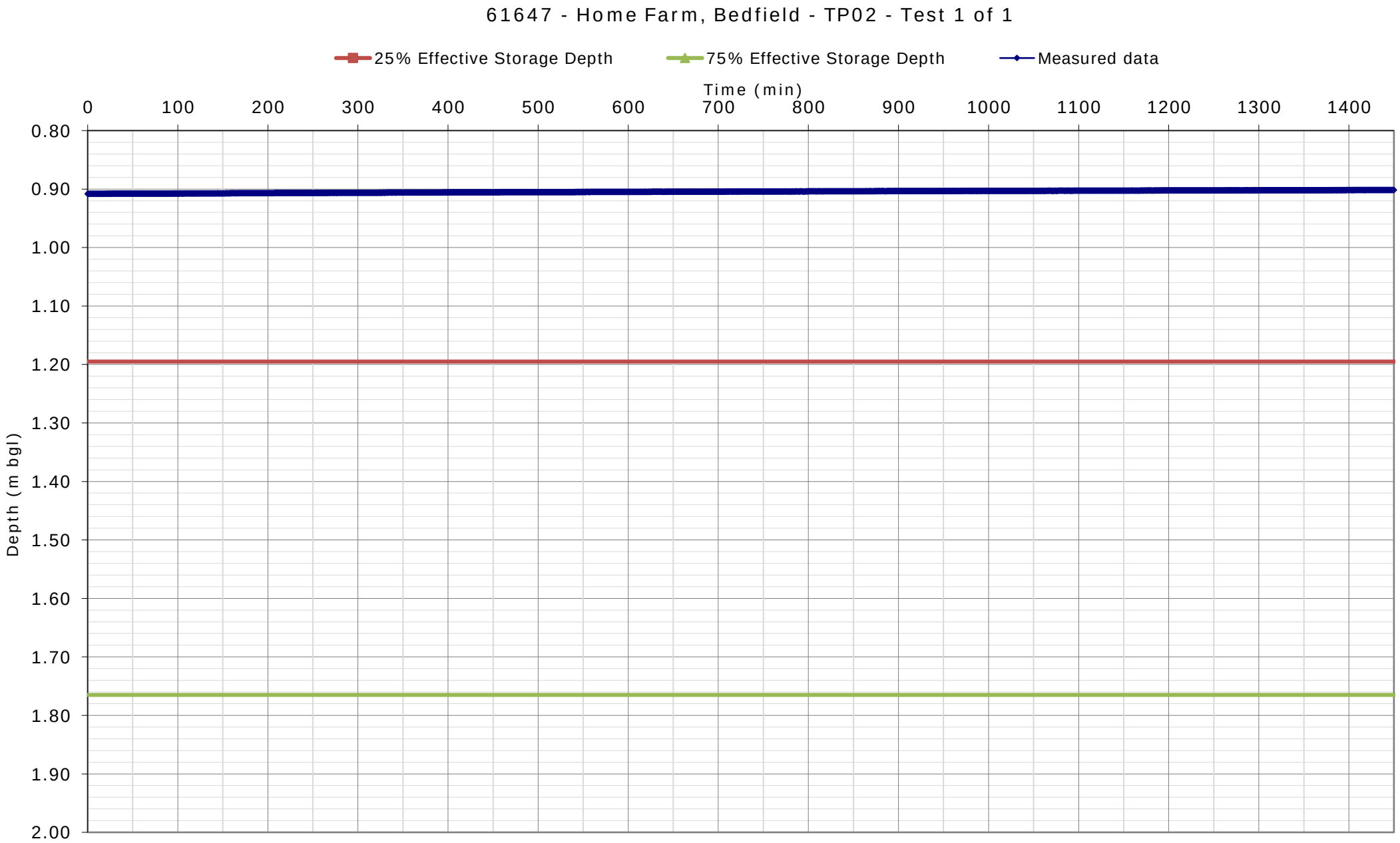
NB Volume adjusted by a factor of 0.3 to allow for presence of gravel in trial pit

Soil Infiltration Rate (f) = Vp_{75-25} / (ap_{50} * tp_{75-25})

Infiltration TP02 - Test 1 of 1 Date: 28/03/2022		
Trial Pit Dimensions		
Length (m)	1.50	
Width (m)	0.30	
Depth (m)	2.05	
Effective Depth (m)	1.14	
$tp_{75\ (mins)}$	Not Achieved	
$tp_{25\ (mins)}$	Not Achieved	
Calculations		
Vp_{75-25}	Insufficent infiltration to undertake calculation	
ap_{50}		
tp_{75-25}		
f =	N/A	m/s

NB Volume adjusted by a factor of 0.3 to allow for presence of gravel in trial pit


61647 - Home Farm, Bedfield - TP01 - Test 1 of 1
25% Effective Storage Depth
75% Effective Storage Depth
Measured data
Time (min)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Depth (m bgl)
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
1.60
1.70
1.80
1.90
2.00


61647 - Home Farm, Bedfield - TP02 - Test 1 of 1
25% Effective Storage Depth
75% Effective Storage Depth
Measured data
Time (min)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Depth (m bgl)
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
1.60
1.70
1.80
1.90
2.00

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Engineering Consultants

Limitations of Investigation

This report is based on the results of the trial pitting, the soakage testing carried out and on details of the scheme provided by the Client.

This report has been prepared for the benefit of Chapter Build Group Ltd. and its contents should not be relied upon by others without the written authority of Richard Jackson Ltd. If any unauthorised third party makes use of this report they do so at their own risk and Richard Jackson Ltd owes them no duty of care or skill.

All information provided by others is taken as being in good faith as being accurate, but Richard Jackson Ltd cannot, and does not; accept any liability for the detailed accuracy, errors or omissions in such information.

Subsoils are by their nature hidden from view and no investigation can be exhaustive to the extent that all soil conditions are revealed. Conditions may well be present beneath the site which was not evident from the investigations carried out.

Groundwater levels can be subject to considerable seasonal variations, and the conditions encountered in the exploratory holes may not reflect long-term conditions.

There can be no guarantee that the samples analysed represent the highest concentrations of contamination present beneath the site.

Unless a greater period of retention of samples is agreed, it is our normal practice to discard all samples one month after submission of our final report.