

TECHNICAL NOTE

Subject: Groundwater Monitoring Interpretative Summary

To: Landlink Estates Ltd

From: Michael Baber (CampbellReith)

Reviewed: Andy Higgins / Bava Sathan (CampbellReith)

Date: 20/05/2022

File Ref: 13684-CRH-ZZ-XX-RP-GE-0005-P1_Groundwater Technical Note.docx

Pages: 4

1.0 SCOPE

This Technical Note has been produced by Campbell Reith Hill LLP (CampbellReith) to provide an interpretive summary of groundwater monitoring undertaken between 25/05/2021 and 29/04/2022 by Harrison Group Environmental at Land West of Bilsham Road, hereafter referred to as the "site".

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2.0 BACKGROUND

The site is located immediately south of Yapton, West Sussex, with a nearest postcode of BN18 0LA and a National Grid Reference of SU 67516 02428.

Site Investigation works including infiltration testing, percolation testing and three rounds of groundwater monitoring were undertaken by Harrison's Group Environmental in June 2021 in support of a hybrid planning application for the site. The results of the ground investigation works are summarised in the Land Quality Statement *13684-CRH-XX-XX-RP-GE-0001-F2_LQS* included as part of the planning application.

Harrison's Group Environmental have since undertaken a further 10 rounds of groundwater level monitoring between 25/05/2021 and 29/04/2022 at 4 window sample locations, WS01, WS02A, WS03 and WS04 following comments from Arun District Council. The locations of the window samples in relation to the site layout are detailed in Appendix A.

A Flood Risk Assessment and Drainage Strategy report (reference: *13684-CRH-XX-XX-RP-C-00021-P3_FRA*) was also produced in December 2021 in support of the planning application. The

proposed drainage strategy sought to provide separate surface water strategies for the detailed and outline portions of the site. The detailed area was proposed to discharge into the onsite watercourse via an attenuation tank and flow control, while runoff from the outline phase of the development was to be attenuated in an unlined basin in the south-west corner of the site prior to controlled discharge into the watercourse. The indicative drainage strategy layout is shown on figure *13684-CRH-XX-XX-FG-G-7040_P2* in Appendix A.

3.0 RESULTS

The results of the further rounds of winter groundwater monitoring are summarised within Table 1.1 below. The full results are presented in Appendix B.

Table 1.1: Harrisons Environmental Group Groundwater Level Monitoring Data

Date	Water Level (m AOD)			
	WS01	WS02A	WS03	WS04
Approx. Ground Level	1.87	4.94	6.08	4.29
25/05/2021	0.67	2.67	3.75	2.71
08/06/2021	0.55	2.61	3.69	2.61
16/06/2021	0.57	2.56	3.67	2.45
22/10/2021	1.30	3.14	4.88	3.27
25/11/2021	0.82	2.79	3.8	2.77
14/12/2021	0.97	2.94	4.08	2.89
13/01/2022	-0.05	3.24	4.65	2.98
23/03/2022	0.97	3.1	4.21	2.89
24/03/2022	0.86	3.01	4.1	2.84
29/04/2022	0.70	2.75	3.85	2.74

It can be seen that temporal changes in recorded groundwater levels are positively correlated between the window sample locations. The major exception is the large groundwater level decrease from 0.97m AOD to -0.05m AOD between 14/12/2021 and 13/01/2022 at WS01 (south-west of the site), whilst the other window samples demonstrated increased in groundwater levels between these dates.

Existing ground levels on the site range from a low point of around 1.80 m AOD in the south-west to around 6.00m AOD in the north-east. The results show that groundwater is generally shallower in the west of the site, nearer the watercourse in WS01 and WS02A, and deeper in the north-east and far-west in WS03 and WS04 respectively.

The highest groundwater level at each of the 4 window sample locations was recorded on 22/10/2021:

- WS01: 1.30m AOD (0.57m bgl)
- WS02A: 3.14m AOD (1.80m bgl)
- WS03: 4.88m AOD (1.20m bgl)
- WS04: 3.27m AOD (1.02m bgl)

As the four window samples are generally situated to the north, east, south and west of the site, the highest groundwater levels can be spatially interpolated between these four points to provide an approximation of the likely groundwater levels across the site. The inherent uncertainty from the use of interpolated data is considered to be mitigated by the use of recorded highest groundwater levels at each of the four window sample locations. The geology of the site has been correlated against available information from the British Geological Survey data. Groundwater would follow the geology and be a uniform body unless interfered by sudden lenses of clay or other hard continuous structures that could cause localised fluctuations.

The interpolated groundwater plane can be seen in relation to the existing site levels as presented on figure *13684-CRH-XX-XX-FG-G-7042_P1* in Appendix A.

4.0 INTERPRETATIVE SUMMARY

It should be noted that the estimated groundwater depths across the extent of the basin are most closely weighted to the recorded levels of WS01, given that this window sample is of the closest proximity to the basin.

As shown on figure *13684-CRH-XX-XX-FG-G-7042_P1* in Appendix A, the interpolated groundwater levels in the approximate location of the proposed basin are noted as c. 1.9-2.0m AOD at the southernmost extent of the basin and c. 2.0m AOD at the northernmost extent of the basin.

As detailed on the outline drainage strategy *13684-CRH-XX-XX-FG-G-7040_P2* in Appendix A, the proposed permanent water depth within the basin is to be approximately 0.90m with a maximum permanent top water level at no less than 2.30m AOD. The outfall to the watercourse and the 0.6m depth temporary storage volume for runoff is to be entirely above this permanent top water level between 2.30 m AOD and 2.90m AOD. Therefore, based upon the factual winter recordings and the interpretation discussed above, it can be considered that the onsite temporary attenuation volume within the proposed basin will not be affected by groundwater.

Soakaway and percolation testing results appraised within the CampbellReith Land Quality Statement (*13684-CRH-XX-XX-RP-GE-0001-F2*) indicated that the superficial material on site is generally cohesive with pockets of granular material and is not suitable for infiltration drainage. It was recommended that drainage infrastructure be protected from the occurrence of settlement with flexible service connections and be designed to mitigate against damage to prevent the egress of water into the chalk thereby forming dissolution features. It was also recommended that drainage be wrapped in geotextiles to prevent the ingress of fines and silting up.

5.0 CONCLUSION

The proposed drainage strategy is not considered to be compromised by the further groundwater monitoring results, on the basis that the interpolated groundwater levels are anticipated to be significantly beneath the proposed permanent water level within the basin. While it could be argued that groundwater could rise up to the permanent depth of water within the basin through the unlined sides, the active attenuation capacity of the basin will be above the maximum groundwater level and will not be influenced by locally elevated groundwater levels.

The recommendations within the existing CampbellReith Land Quality Statement and Flood Risk Assessment & Drainage Strategy are still considered appropriate following the results of the additional groundwater monitoring which have been interpreted within this Technical Note.

It is recommended that the existing CampbellReith reports be read in conjunction with this Technical Note.

APPENDIX A

Figure 1: Ground Investigation Location Plan

Figure 2: Surface Water Drainage Strategy

Figure 3: Groundwater Level Cross Sections



Land west of Bilsham Road
Client: Landlink Estates Ltd

Figure 6:
Exploratory Hole Location Plan

Scale: 1:2500@A3
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Job Number: 13684
Drawn by - Checked by: RLF/RP - RA/PW
Drg No - Status/Revision: 13684-CRH-XX-XX-FG-G-7017 - P5
File location: \\red-data\gis-data\13500 - 13749\13684 R - Lamb Field\Project_Workspaces\LQS (pdf in Outputs)
Date (Revision History): 01/12/2021 (P1, First Issue, 15/07/21, RLF; P2, Client Name, 29/07/21, RLF; P3, Client Logo, 29/07/21, RLF; P4, GI update, 17/09/21, RP; P5, Site Boundary, 01/12/21, RLF)

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Parcel	Storage Requirement (m ³)						
	SuDS Feature	Depth (m)	Area (m ²)	Void Ratio	Length (m)	%	Storage (m ³)
Parcel A	Permeable Pave	0.45	1555	30%		33%	210
	Attenuation Tank A1	1.00	263	95%		39%	250
	Attenuation Tank A2	1.30	141	95%		27%	174
	Total Provided					100%	634

Parcel	Storage Requirement (m ³)						
	SuDS Feature	Depth (m)	Area (m ²)	Void Ratio	Length (m)	%	Storage (m ³)
Outline Area	Permeable Pave	0.45	4500	30%		31%	608
	Pond	0.60	1600			49%	960
	Swale (effective vol)	0.40			450	8%	153
	Residual Attenuation (Shallow Basin)	0.15	1630			12%	245
	Residual Attenuation (Attenuation Tanks)	1.00	260	95%		12%	245
	Total Provided					100%	1966
	Total Required						1964

Vortex Flow Control
Set at QBar (~3.3l/s
for Area A)
IL = 2.5m

Outfall 1
Approx. IL = 2.55 m
Subject to Ordinary
Watercourse Consent.

Attenuation Tank A1
Area = 8m x 33m = 264m²
Depth = 1.0m
Volume = 250m³
CL = 4.20 m (0.6 cover allowance)
Top of tank = 3.60m
IL = 2.60m
To be installed during Phase 1

Attenuation Tank A2
Area = 5m x 28m = 140m²
Depth = 1.3m
Volume = 170m³
CL = 4.2 m (0.6 cover allowance)
Top of tank = 3.60m
IL = 2.60m
To be installed during Phase 1.

Area A (Phase 1)
Impermeable area = 0.63 ha
+ 10% UC = 0.69 ha
All private and shared driveways within
Phase 1 to be permeable paving.
Assumed that 75% positively contribute
to the attenuation on site. Approx 210m³.

All pipes within Area A under
highways to be minimum
300mm diameter with cover
equal to or greater than 1.2m
and laid at minimum 1:200 to
achieve self cleansing velocity.

Outline Application Area
Areas B, C, D, E + F
Impermeable area = 1.76 ha (+ 10% UC = 2.29 ha)

Roadside Swales
Assumed 0.4m deep swales running the length
of the highway to provide conveyance, treatment
and storage of runoff. Check dams to be
introduced periodically to control runoff an
maximise storage potential. Effective storage
volume assume

Pond (SuDS/wildlife feature)
Permanent Water approx 0.9m deep.
0.6m deep temporary storage with 1:3 to 1:5 side
slopes to provide attenuation and treatment to run-off.
Area = approx 1600 m²
Depth = 0.60m
Volume = 960m³
Assumed TWL of permanent pond = 2.30 mAOD
TWL of temporary storage in pond = 2.90 mAOD.
Optional storage provided in shallow basin area around
pond as indicated.

Outfall 2
Approx. IL = 1.45 m
Subject to Ordinary
Watercourse Consent.

Vortex Flow Control
Set at QBar (~9.8l/s
for Outline area)
IL = 1.70m

Optional Shallow Dry Basin/Exceedance Storage
(Around perimeter of pond)
To provide up to 245m³ additional exceedance attenuation
as alternative to attenuation tanks.
Max 0.15m deep basin over area of approx 1600m² with 1:5
side slope and flattened

Permeable Paving
All private and shared driveways within outline area
to be permeable paving. Average sub base depth
450mm, void ratio 30%.
Assumed that 75% positively contribute to the
attenuation on site. Total volume = approx 600 m³.

NOTES
1.Attenuation Requirement = 944m³/ha
2.No infiltration assumed.
3.Assumed that 75% of private/shared driveways as usable as
permeable paving due to levels across parcels A and B.
4.Detailed Area - Phase 1 (Area A) to provide sufficient attenuation to
be self sufficient with no reliance on other parcels.
5.Assumed that swale running the length of the main highway through
the site as shown in green provides adequate storage for highway run-
off.
Therefore:
Total storage volume required for Phase 1 (Area A) = approx 860 m³
Permeable Paving = 315 m³
Attenuation tank in POS = 390 m³

Legend

Site Boundary

Land Parcel

Phase 1 Surface Water Manhole

Phase 1 Flow Control Manhole

Phase 1 Surface Water

Phase 1 Attenuation Tank

Surface Water Manhole

Flow Control Manhole

Surface Water

Permeable Paving

Swale

Optional Exceedance Storage Area

Approximate Location of Gas Main

Gas Main Easement (assumed 3m each side)



Land west of Bilsham Road
Client: Landlink Estates Ltd

Surface Water Drainage Strategy

Scale: 1:2000@A3
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Indigo Landscape Architects Ltd, Illustrative Landscape Masterplan, drg no 964-MP-01 Rev B (Dec 2021)
Job Number: 13684
Drawn by - Checked by: RP/RLF - AJH
Drg No - Status/Revision: 13684-CRH-XX-XX-FG-G-7040 - P2
File location: \\red-data1\gis-data\13500 - 13749\13684 R - Lamb Field\Project_Workspaces (pdf in Outputs)
Date (Revision History): 23/12/2021 (P1, First Issue, 20/12/21, RP; P2, Minor Amendments, 23/12/21, RLF)

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Notes

1. Drawing Status:

P: Preliminary Evolving drawings for approvals, tenders, billings etc.

C: Construction Fully developed drawings issued under instructions for construction.

2. Only status C drawing to be used for construction.

3. Suitability Code:

Work in Progress

S0 - Work in Progress

Shared (Non Contractual)

S1 - For coordination, S2 - For information, S3 - For internal review and comment, S4 - For construction approval.

Documentation (For Contractors Purposes)

D1 - For costing, D2 - For tender, D3 - For contractor design, D4 - For manufacture/procurement.

Construction

A - For construction, B - For construction but with comments (i.e. areas in abeyance), CR - Construction Record (Final)

Construction ONLY. Any deviation to that which is on site is not the liability of CampbellReith

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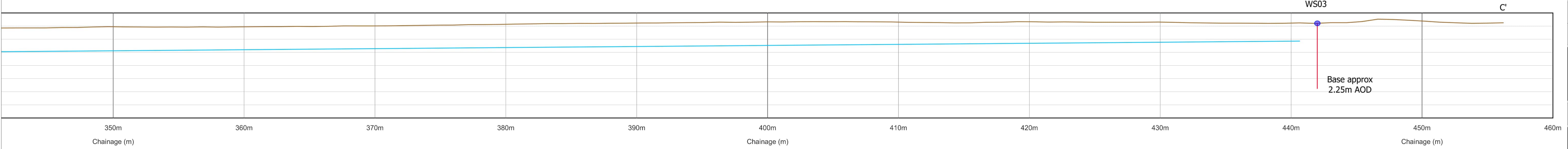
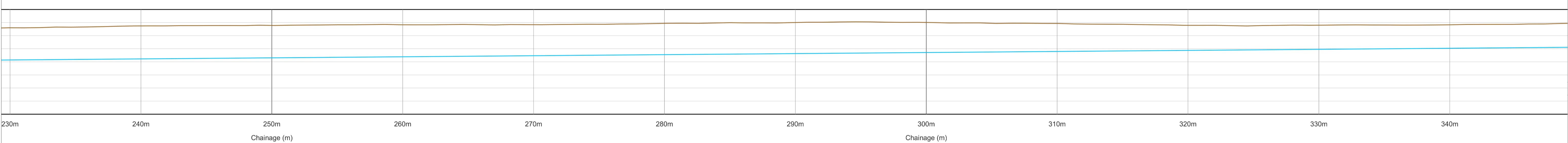
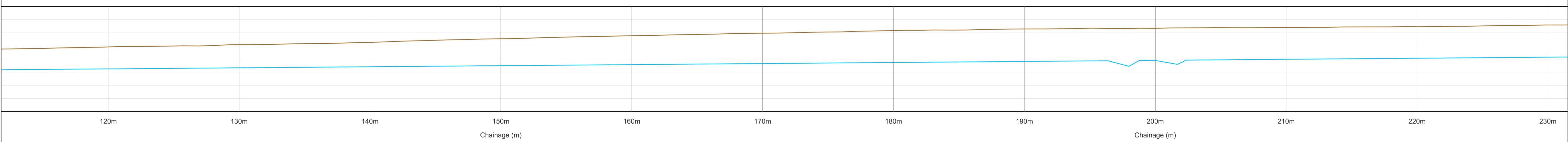
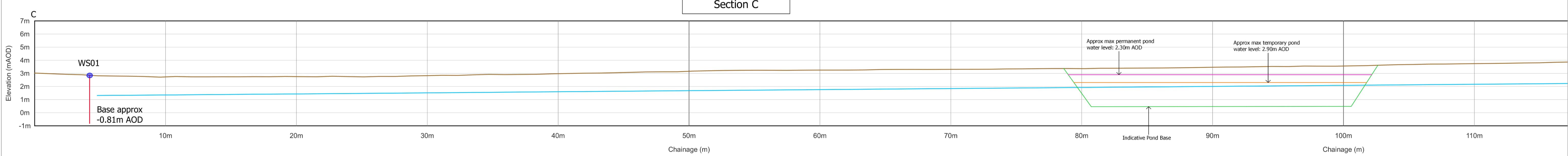
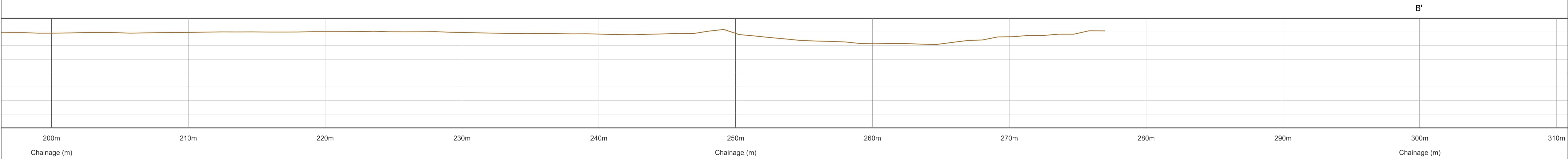
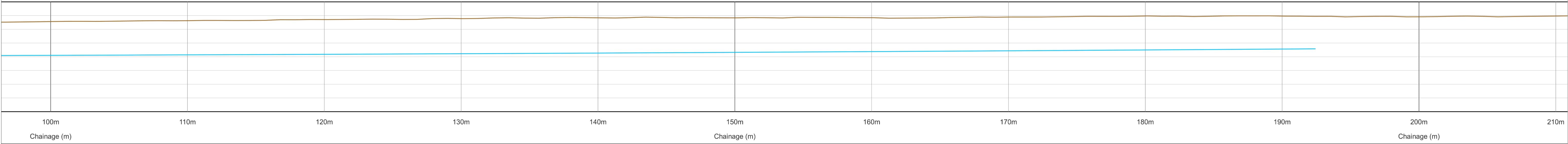
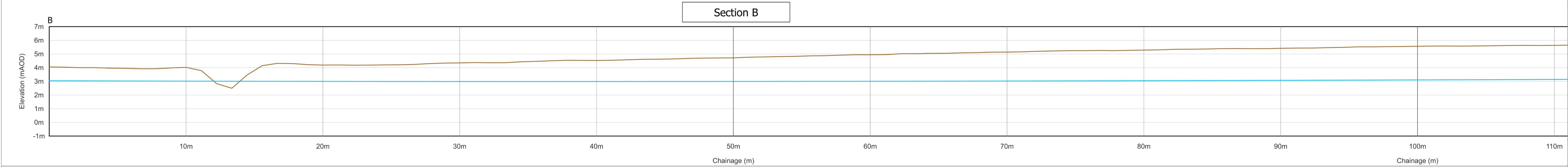
LEGEND

Existing ground level

Maximum winter groundwater level

Pond maximum top permanent water level

Pond indicative temporary water level



P1 First Issue 20/05/22 RLF

Rev Description Date By

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Job Title

Land west of Bilsbam Road

Client

Landlink Estates Ltd

LANDLINK ESTATES

Groundwater Level Sections

Drawn by

RLF

Date made

May 2022

Scale @A0

NTS

Checked by

MB

Suitability

S2

CR Project

13684

Project No.

13684

Originator

CRH

Volume

XX

Lv(Loc)

XX

Type

FG

Role

G

Number

7042

Rev

P1

APPENDIX B

Harrison Group Environmental Groundwater Monitoring Results (25/05/2021 to 29/04/2022), Ref:
FM-Hn-R-3050-Rev A

				Groundwater Monitoring Results																											
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Cloudy and dry																			
Date: 25/05/2021				Location: Lamb's Field								Ground conditions: -																			
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.												² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.				³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.															
Field engineer(s): W. Atkins												Remarks:																			
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Readings:											Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)			
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)						Water Pressure (psi)		
WS01	PIPE1 (50mm)	25/05/2021	11:07:00	1.87	N/E		1.20	0.67	N/E		2.68	-0.81													1.48			Interface meter recorded a solid beep from 1.88m, possibly due to increased turbidity.			
WS02A	PIPE1 (50mm)	25/05/2021	10:44:00	4.94	N/E		2.27	2.67	N/E		4.07	0.87													1.80			Interface meter recorded a solid beep from 2.95m, possibly due to increased turbidity.			
WS03	PIPE1 (50mm)	25/05/2021	10:30:00	6.08	N/E		2.33	3.75	N/E		5.05	1.03													2.72			Interface meter recorded a solid beep from 3.04m, possibly due to increased turbidity.			
WS04	PIPE1 (50mm)	25/05/2021	11:26:00	4.29	N/E		1.58	2.71	N/E		3.05	1.24													1.47			Interface meter recorded a solid beep from 2.27m, possibly due to increased turbidity.			

				Groundwater Monitoring Results																									
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Sunny and dry																	
Date: 08/06/2021				Location: Lambs Field								Ground conditions: -																	
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.												² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.											
Field engineer(s): J. Blyth				Remarks:																									
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)	Water Pressure (psi)	Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)
WS01	PIPE1 (50mm)	08/06/2021	11:10:00	1.87	N/E		1.32	0.55	N/E		2.80	-0.93														1.48			
WS02A	PIPE1 (50mm)	08/06/2021	10:30:00	4.94	N/E		2.33	2.61	N/E		4.12	0.82														1.79			
WS03	PIPE1 (50mm)	08/06/2021	10:00:00	6.08	N/E		2.39	3.69	N/E		5.01	1.07														2.62			
WS04	PIPE1 (50mm)	08/06/2021	10:50:00	4.29	N/E		1.68	2.61	N/E		3.23	1.06														1.55			

				Groundwater Monitoring Results																									
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Sunny and dry																	
Date: 16/06/2021				Location: Lambs Field								Ground conditions: -																	
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.										² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.													
Field engineer(s): J. Blyth										Remarks:																			
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Readings:										Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)		
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)						TDS (ppt)	Water Pressure (psi)
WS01	PIPE1 (50mm)	16/06/2021	11:30:00	1.87	N/E		1.30	0.57	N/E		2.70	-0.83											B	1.40		EW1-SP1	Slightly cloudy, white/orange.		
WS02A	PIPE1 (50mm)	16/06/2021	11:00:00	4.94	N/E		2.38	2.56	N/E		4.11	0.83											B	1.73		EW1-SP1	Slightly cloudy, white/orange.		
WS03	PIPE1 (50mm)	16/06/2021	10:30:00	6.08	N/E		2.41	3.67	N/E		5.06	1.02											B	2.65		EW1-SP1	Cloudy, light orangish brown.		
WS04	PIPE1 (50mm)	16/06/2021	12:00:00	4.29	N/E		1.84	2.45	N/E		3.24	1.05											B	1.40		EW1-SP1	Cloudy, light orangish brown.		

				Groundwater Monitoring Results																							
Project ID: GL24212				Client: Landlink Estates Limited				Weather conditions: Sunny and dry																			
Date: 22/10/2021				Location: Lambs Field				Ground conditions: -																			
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.								² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.				³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.															
Field engineer(s): J. Blyth				Remarks:																							
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth¹ (mbgl)	LNAPL Depth¹ (maOD)	Water Level¹ (mbgl)	Water Level (maOD)	DNAPL Depth¹ (mbgl)	DNAPL Depth (maOD)	Depth to base¹ (mbgl)	Depth to base (maOD)	Readings:										Sampling Method² (I, S, B, P)	Water Column (m)	Purged Volume³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)					
WS01	PIPE1 (50mm)	22/10/2021	10:30:00	1.87	N/E		0.57	1.30	N/E		2.48	-0.61												1.91			
WS02A	PIPE1 (50mm)	22/10/2021	10:10:00	4.94	N/E		1.80	3.14	N/E		4.00	0.94												2.20			
WS03	PIPE1 (50mm)	22/10/2021	10:00:00	6.08	N/E		1.20	4.88	N/E		5.01	1.07												3.81			
WS04	PIPE1 (50mm)	22/10/2021	10:20:00	4.29	N/E		1.02	3.27	N/E		3.04	1.25												2.02			

				Groundwater Monitoring Results																																			
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Cloudy and dry																											
Date: 25/11/2021				Location: Lambs Field								Ground conditions: -																											
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.												² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.																					
Field engineer(s): L. Jeffery												Remarks:																											
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Readings:											Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)											
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)						Water Pressure (psi)										
WS01	PIPE1 (50mm)	25/11/2021	14:10:00	1.87	N/E		1.05	0.82	N/E		2.43	-0.56														1.38													
WS02A	PIPE1 (50mm)	25/11/2021	13:48:00	4.94	N/E		2.15	2.79	N/E		4.00	0.94														1.85													
WS03	PIPE1 (50mm)	25/11/2021	13:43:00	6.08	N/E		2.28	3.80	N/E		5.02	1.06														2.74													
WS04	PIPE1 (50mm)	25/11/2021	13:57:00	4.29	N/E		1.52	2.77	N/E		3.06	1.23														1.54													

				Groundwater Monitoring Results																									
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Cloudy and dry																	
Date: 14/12/2021				Location: Lambs Field								Ground conditions: -																	
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.										² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.													
Field engineer(s): L. Jeffery										Remarks:																			
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm ³)	TDS (ppt)	Water Pressure (psi)	Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)
WS01	PIPE1 (50mm)	14/12/2021		1.87	N/E		0.90	0.97	N/E		2.50	-0.63														1.60			
WS02A	PIPE1 (50mm)	14/12/2021		4.94	N/E		2.00	2.94	N/E		4.02	0.92														2.02			
WS03	PIPE1 (50mm)	14/12/2021		6.08	N/E		2.00	4.08	N/E		5.00	1.08														3.00			
WS04	PIPE1 (50mm)	14/12/2021		4.29	N/E		1.40	2.89	N/E		3.03	1.26														1.63			

				Groundwater Monitoring Results																											
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Cloudy and dry																			
Date: 13/01/2022				Location: Lambs Field								Ground conditions: -																			
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.										² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.															
Field engineer(s): L. Jeffery										Remarks:																					
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Readings:										Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)				
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)						TDS (ppt)	Water Pressure (psi)		
WS01	PIPE1 (50mm)	13/01/2022	12:40:00	1.87	N/E		1.92	-0.05	N/E		2.48	-0.61												0.56							
WS02A	PIPE1 (50mm)	13/01/2022	12:15:00	4.94	N/E		1.70	3.24	N/E		4.00	0.94												2.30							
WS03	PIPE1 (50mm)	13/01/2022	12:00:00	6.08	N/E		1.43	4.65	N/E		5.00	1.08												3.57							
WS04	PIPE1 (50mm)	13/01/2022	12:25:00	4.29	N/E		1.31	2.98	N/E		3.02	1.27												1.71							

				Groundwater Monitoring Results																							
Project ID: GL24212				Client: Landlink Estates Limited				Weather conditions: Cloudy and dry																			
Date: 23/02/2022				Location: Lambs Field				Ground conditions: -																			
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.								² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.				³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.															
Field engineer(s): L. Jeffery				Remarks:																							
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth¹ (mbgl)	LNAPL Depth (maOD)	Water Level¹ (mbgl)	Water Level (maOD)	DNAPL Depth¹ (mbgl)	DNAPL Depth (maOD)	Depth to base¹ (mbgl)	Depth to base (maOD)	Readings:										Sampling Method² (I, S, B, P)	Water Column (m)	Purged Volume³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)					
WS01	PIPE1 (50mm)	23/02/2022		1.87	N/E		0.90	0.97	N/E		2.40	-0.53												1.50			
WS02A	PIPE1 (50mm)	23/02/2022		4.94	N/E		1.84	3.10	N/E		3.98	0.96												2.14			
WS03	PIPE1 (50mm)	23/02/2022		6.08	N/E		1.87	4.21	N/E		4.97	1.11												3.10			
WS04	PIPE1 (50mm)	23/02/2022		4.29	N/E		1.40	2.89	N/E		3.04	1.25												1.64			

				Groundwater Monitoring Results																											
Project ID: GL24212				Client: Landlink Estates Limited						Weather conditions: Cloudy and dry																					
Date: 24/03/2022				Location: Lambs Field						Ground conditions: -																					
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.									² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.																
Field engineer(s): L. Jeffery									Remarks:																						
				Readings:																											
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth¹ (mbgl)	LNAPL Depth¹ (maOD)	Water Level¹ (mbgl)	Water Level (maOD)	DNAPL Depth¹ (mbgl)	DNAPL Depth (maOD)	Depth to base¹ (mbgl)	Depth to base (maOD)	Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)	TDS (ppt)	Water Pressure (psi)	Sampling Method² (I, S, B, P)	Water Column (m)	Purged Volume³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)		
WS01	PIPE1 (50mm)	24/03/2022		1.87	N/E		1.01	0.86	N/E		2.40	-0.53														1.39					
WS02A	PIPE1 (50mm)	24/03/2022		4.94	N/E		1.93	3.01	N/E		3.94	1.00														2.01					
WS03	PIPE1 (50mm)	24/03/2022		6.08	N/E		1.98	4.10	N/E		4.94	1.14														2.96					
WS04	PIPE1 (50mm)	24/03/2022		4.29	N/E		1.45	2.84	N/E		3.05	1.24														1.60					

				Groundwater Monitoring Results																									
Project ID: GL24212				Client: Landlink Estates Limited								Weather conditions: Cloudy and dry																	
Date: 29/04/2022				Location: Lambs Field								Ground conditions: -																	
¹ = All (m) depth measurements are recorded as meters from the top of the installation cover.										² = I: Inertial, S: Submersible, B: Bailer, P: Peristaltic Pump.						³ = Purge volume standardisation: 50mm standpipe = 6 x water column, 35mm = 3.5 x water column, 19mm = 1 x water column.													
Field engineer(s): L. Jeffery										Remarks:																			
Location ID	Monitoring Pipe and Diameter	Date Monitored	Time	Surface Elevation (maOD)	LNAPL Depth ¹ (mbgl)	LNAPL Depth (maOD)	Water Level ¹ (mbgl)	Water Level (maOD)	DNAPL Depth ¹ (mbgl)	DNAPL Depth (maOD)	Depth to base ¹ (mbgl)	Depth to base (maOD)	Readings:										Sampling Method ² (I, S, B, P)	Water Column (m)	Purged Volume ³ (L)	Sample Ref	Comments: (e.g. problems encountered, standpipe conditions, unusual odours, colour, turbidity, sheens)		
													Barometric Pressure (mB)	Air Temp (°C)	Downhole Temp (°C)	pH	Electrical Conductivity (µS/cm)	DO (%)	Redox Potential (mV)	Resistivity (Ohm-cm)	Salinity (psu)	Density (g/cm³)						TDS (ppt)	Water Pressure (psi)
WS01	PIPE1 (50mm)	29/04/2022		1.87	N/E		1.17	0.70	N/E		2.39	-0.52													1.22				
WS02A	PIPE1 (50mm)	29/04/2022		4.94	N/E		2.19	2.75	N/E		3.94	1.00													1.75				
WS03	PIPE1 (50mm)	29/04/2022		6.08	N/E		2.23	3.85	N/E		4.96	1.12													2.73				
WS04	PIPE1 (50mm)	29/04/2022		4.29	N/E		1.55	2.74	N/E		3.05	1.24													1.50				