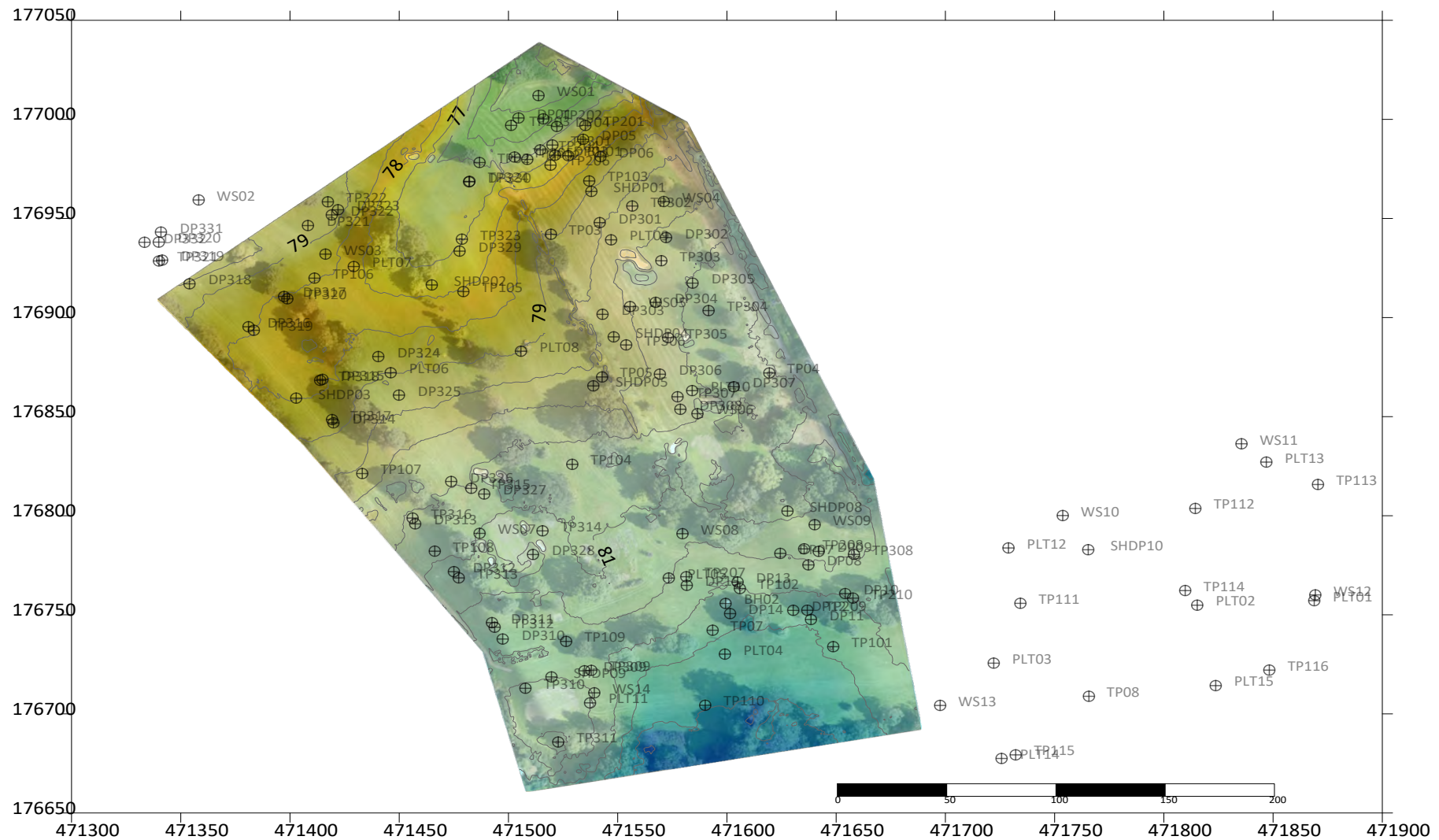
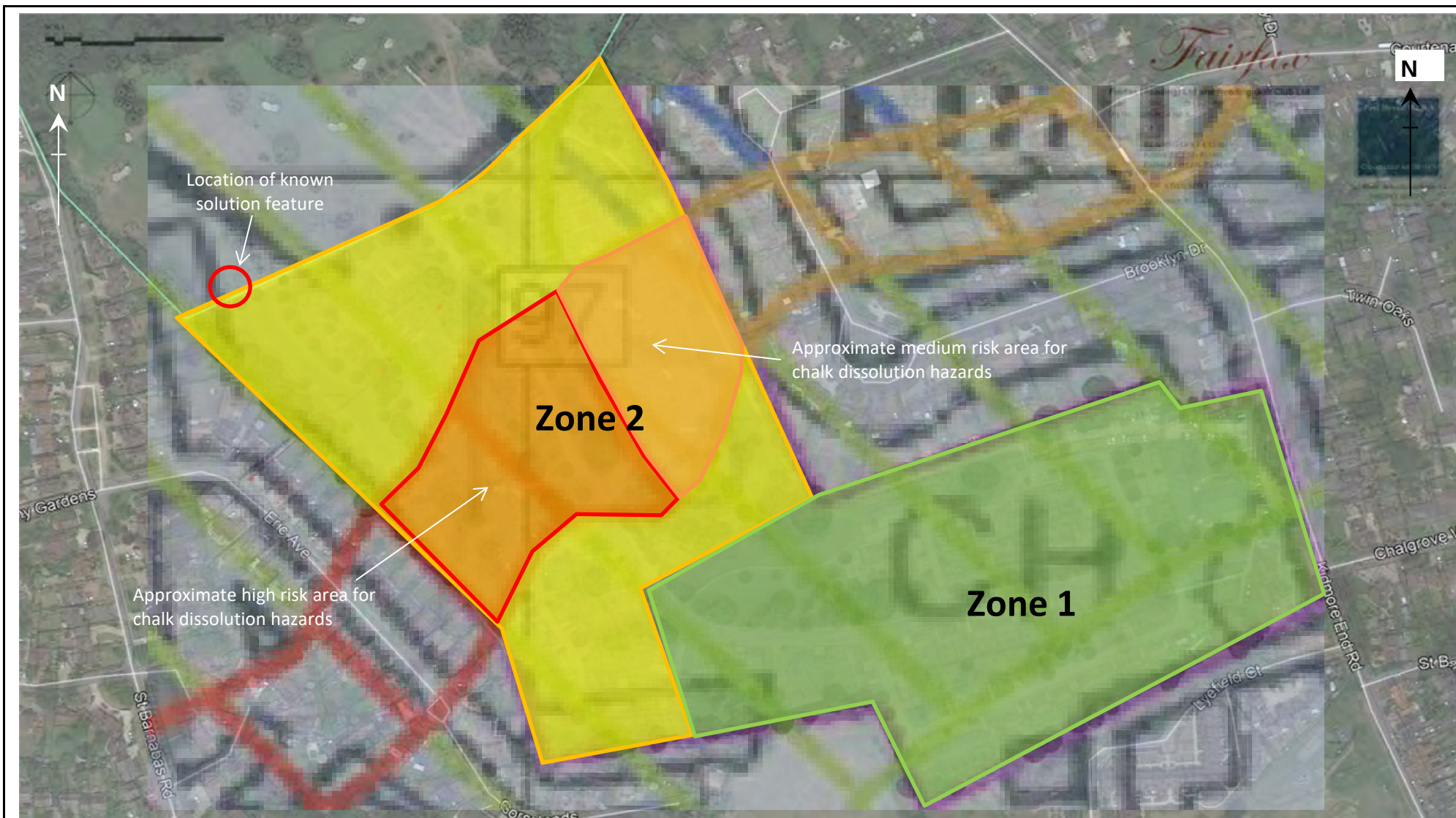
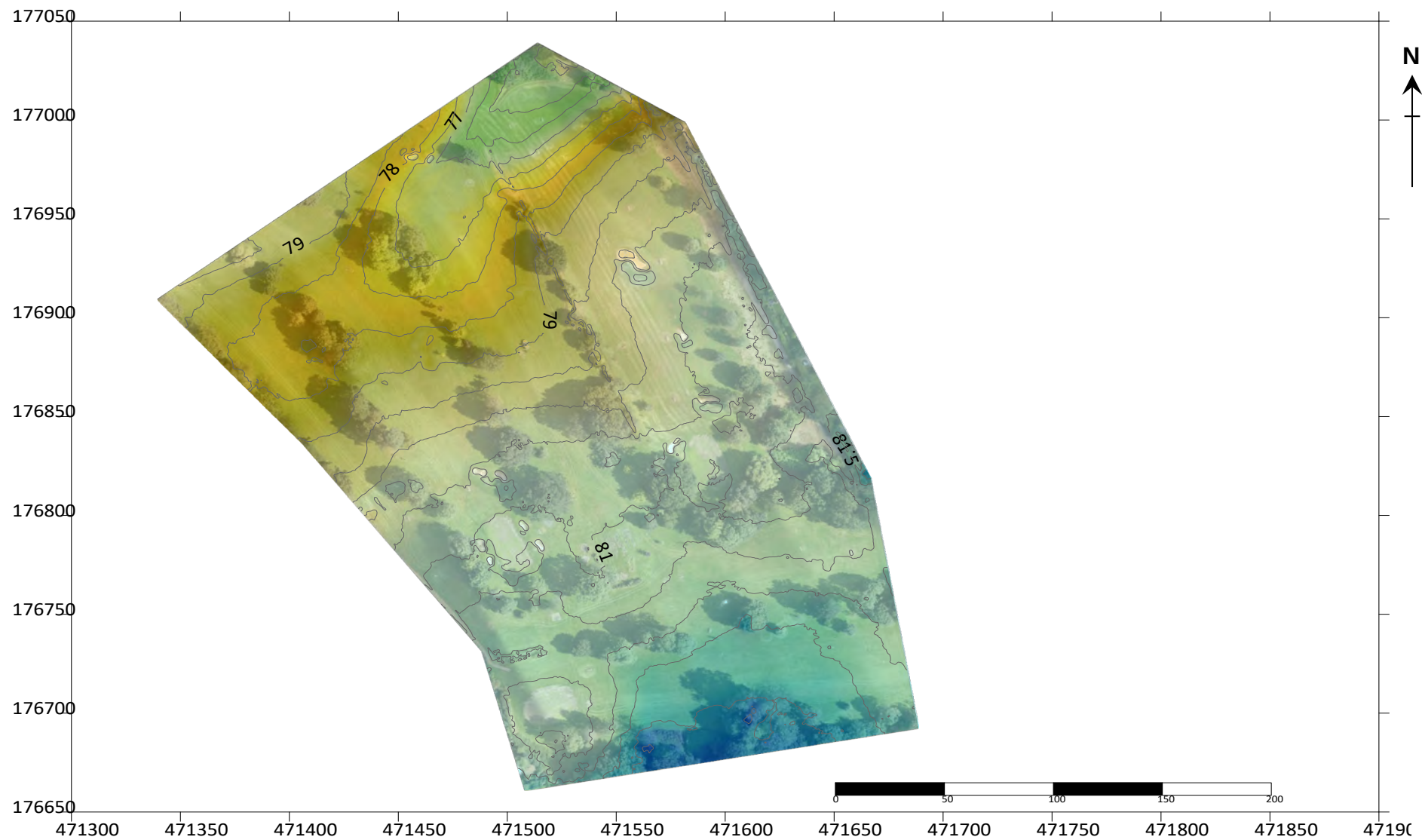




Project:	Reading Golf Course			Title	Exploratory Hole Location Plan		
Client:	Vistry Thames Valley			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental	
Ref No:	GE20079	Revision:	1.0				
Drawn:	GR	Date:	28/09/2021				
Figure:	2	Scale:	Not To Scale				



Project:	Reading Golf Course			Title	Site Zoning Plan	
Client:	Vistry Thames Valley			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net  Geo-Environmental		
Ref No:	GE20079	Revision:	1.0			
Drawn:	GR	Date:	28/09/2021			
Figure:	3	Scale:	Not To Scale			



Project:	Reading Golf Course			Title	Digital Terrain Model (2D)		
Client:	Vistry Thames Valley			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental	
Ref No:	GE20079	Revision:	1.0				
Drawn:	GR	Date:	28/09/2021				
Figure:	4	Scale:	Not To Scale				



NOTE: This 3D model surface is for illustrative purposes and includes a 5x vertical exaggeration

Project:	Reading Golf Course			Title	Digital Terrain Model (3D)	
Client:	Vistry Thames Valley			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net  Geo-Environmental		
Ref No:	GE20079	Revision:	1.0			
Drawn:	GR	Date:	28/09/2021			
Figure:	5	Scale:	Not To Scale			

APPENDIX A

Geophysical Survey Report





**Geophysical Survey Report
Former Reading Golf Club
Berkshire**

**For
Geo-Environmental Services Ltd
On behalf of
Vistry Thames Valley**

Magnitude Surveys Ref: MSSU986

September 2021



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Issue Date:

29 September 2021

Abstract

Magnitude surveys was commissioned to identify areas of high risk of solution features within a 6.8ha area of land at Reading Golf Club, Reading. An initial electromagnetic induction (EM) survey of 4.9ha was completed, with 1.28ha not surveyed due to the presence of trees, dense vegetation and golf course features. The EM data shows clear contrast between areas recorded to be underlain by chalk bedrock and those on clay, silt and sand. Targeted Ground Penetrating Radar (GPR) survey was then carried out over specific areas based on the EM (and previous magnetic) results. The GPR supports the results of the EM interpretation suggesting that the highest likelihood for solution features is the zone of transition between the different geologies, in the northeast quadrant of the survey area. Other anomalies detected by these techniques include golf course features, drainage, and disturbed ground.

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1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Geo-Environmental Services Limited on behalf of Vistry Thames Valley to undertake a geophysical survey over a c. 6.8ha area of land at the former Reading Golf Club, Berkshire (SU 7148 7692).
- 1.2. The geophysical survey comprised quad-towed, cart-mounted GNSS-positioned electromagnetic (EM) induction and hand-pushed, cart-/sled-mounted ground penetrating radar (GPR) survey. EM survey provides data related to both soil electrical conductivity and magnetic susceptibility. It provides multiple datasets corresponding to properties of bulk soil volumes at various depths of investigation, and is particularly suited for detecting palaeolandscape features, such as palaeochannels and superficial deposits, and deeper conductive targets. MS' Ofcom Ground Probing Radar licence number is 1200059/1.
- 1.3. The survey commenced on 28/06/21 and took 8 days to complete.

2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Kayt Armstrong has a PhD in archaeological geophysics from Bournemouth University, is a Member of CIfA, the Editor of ISAP News, and is the UK Management Committee representative for the COST Action SAGA; Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

- 3.1. The objective of the geophysical survey was to assess the survey area for possible ground dissolution features in advance of future intrusive investigations.

4. Geographic Background

- 4.1. The survey area was located c. 3.4km north of the centre of Reading (Figure 1). Survey was undertaken across part of a golf course. The EM survey area is bordered by housing off Brooklyn Drive to the east, Emmer Green Primary School to the south and housing off Eric Avenue to the west. The golf course continues to the north and southeast of the survey area (Figure 2).

Approximately 1.28ha were unable to be surveyed due to trees and golf course features. There are also 6 areas of GPR survey in-between the trees and bunkers on the golf course.

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
EM	The area consisted of mostly flat, golf course green, with some areas of sand for bunkers.	The survey area had trees on the eastern, western, and southern boundaries as well as throughout the area. Some areas were unsurveyable due to golf course features.
1 (GPR)	The area consisted of golf course with a gentle slope to the south-east.	A line of small trees marked the eastern and western boundaries. The north and south had no physical boundaries.
2 (GPR)	The area consisted of mostly flat, golf course green.	There were no physical boundaries to the north, west, and south of the area. The boundary to the east consisted of trees and a ditch, some of which was unsurveyable.
3 (GPR)	The area consisted of mostly golf course green.	The survey area had small trees and a ditch as a boundary to the west and no physical boundaries to the north, east, and south. A small area in the north-east was unsurveyable due to a steep bunker.
4 (GPR)	The area consisted of mostly flat, golf course green.	The survey area had trees as a boundary to the west and no physical boundaries to the north, east, and south. Two areas in the north-east and south-east were unsurveyable due to bunkers.
5 (GPR)	The area consisted of mostly flat, golf course green.	The survey area had trees as a boundary to the east and west, and no physical boundary to the north and south. Areas along the eastern boundary were unsurveyable due to overhanging trees interfering with GPS signal and due to a steeply-sided dip in the ground.
6 (GPR)	The area consisted of mostly flat, golf course green.	The survey area had trees as a boundary to the east and west, and no physical boundary to the north and south. Areas along the eastern and western boundaries were unsurveyable due to overhanging trees interfering with GPS signal
7 (GPR)	The area consisted of golf course green with a gentle slope to the south-west.	The survey area is bounded to the north-east by trees. The golf course continued to the northwest, south, east and west. An area to the west is unsurveyable due to a steeply-sided dip in the ground. A small area to the south-west consists of gravel.

- 4.3. The underlying geology comprises chalk of the Seaford and Newhaven Chalk Formations in the north and clay, silt and sand of the Lambeth Group in the south. The superficial deposits across the majority of the survey area consist of sands and gravels of the Black Park Gravel Member. No superficial deposits are recorded across a small portion of the eastern extent of the survey area (British Geological Survey, 2021).

- 4.4. Slightly acid loamy and clayey soils with impeded drainage are present across the entire survey area (Soilscapes, 2021).

5. Methodology

5.1. Data Collection

- 5.1.1. Geophysical prospection comprised the complementary Electromagnetic Induction (EM) and Ground Penetrating Radar (GPR) methods as described in the following table.

- 5.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Electromagnetic Induction – Conductivity and Magnetic Susceptibility	GF Instruments CMD Explorer in Vertical Coplaner (VCP) orientation	4m	5Hz reprojected to 0.25m
Ground Penetrating Radar	MALÅ Mira with a 400MHz Antenna	0.5m	0.05m

- 5.1.3. The EM data were collected using MS' bespoke quad-towed cart system.

- 5.1.4. MS' cart system comprised GF Instruments CMD Explorer in VCP orientation to facilitate greater depth penetration. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

- 5.1.5. Electromagnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

- 5.1.6. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

- 5.1.7. The GPR data were collected along traverses separated by 0.5m and set out within a grid established using a Carlson BRx6 GNSS Smart Antenna RTK GPS, which is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical. The radar equipment was set to sample every 0.05m along each traverse, controlled by the odometer wheel attached to the system. The odometer was distance calibrated at the start of the survey.

5.2. Data Processing

5.2.1. EM data

- 5.2.1.1. Electromagnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to the EAC and Historic England guidelines for 'minimally enhanced data' (see Section 3.8 in Schmidt et al., 2015: 33 and Section IV.2 in David et al., 2008: 11).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

5.2.2. GPR data

- 5.2.2.1. GPR data were processed in the standard commercial software package RSlicer. GPR Processing steps were limited to:

DC Shift – The waveform response for each traverse was centred to correct for striping effects caused by small variations in sensor electronics and orientation.

Bandpass Filter – Frequencies outside the normal range of the measuring antennas were filtered out to remove errors from external sources.

Background Removal – Background 'noise' was filtered out of the data to improve clarity and aid in the detection of weak anomalies.

Gain Adjust – A gain curve was manually calculated to account for signal attenuation with depth. The gain adjust allows features at depth with a weaker signal to be resolved at the same plotting scale as near surface features.

Hyperbola fitting – Manual fitting of hyperbola curves was conducted to calculate the velocity of the wave. This allows the calculation of response depth from response time.

Hilbert Transform – An envelope of the GPR trace was created where the positive and negative polarity amplitude responses of a reflection event were transformed into the total amplitude for each reflection response. This creates absolute values for each response so that the total amplitudes are comparable.

5.3. Data Visualisation and Interpretation

- 5.3.1. The electromagnetic (quadrature-phase and in-phase) results are presented as greyscale images. Multiple greyscale images at different plotting ranges have been used for data interpretation. The EM interpretation is partly derived from the quadrature-phase, which is a proxy for apparent electrical conductivity. These datasets are referred to as C1, C2 and C3 and roughly correspond to bulk soil volumes equated to c. 1.1m, 2.1m and 3.5m below ground level, respectively. However, as the EM is measuring a bulk soil volume, it will be sensitive to features above and below these theoretical exploration depths. The EM interpretation is also derived from the in-phase component of the EM response, which relates to the soil's magnetic susceptibility. The in-phase roughly corresponds with a bulk soil volume of half that of the quadrature-phase. The different receiving coil responses are referred to as I1, I2, and I3 for the magnetic susceptibility. The various investigation depths are described comparatively here as shallow, middle, and deep soil volumes. From this point onward, the respective quadrature-phase and in-phase datasets will be referred to as EM conductivity and EM magnetic susceptibility, respectively. The geophysical results have been interpreted in a layered environment, overlaid against open street mapping, satellite imagery, historical maps, LiDAR data, and soil and geology mapping. Google Earth (2021) was also consulted, to compare the results with recent land use.
- 5.3.2. The individual GPR radargrams were stacked to form a three-dimensional cube of measurements. Greyscales were created by horizontally slicing the cube to produce plan-view 'timeslices'. These timeslices were initially considered in an animated GIF form, to analyse the three-dimensional extent of reflections. For print purposes, three gross soil volumes were considered: shallow, middle, and deep. The mean of the timeslices within each gross soil volume was taken and used as a representative time slice for the interpretation figures. The timeslices were also interpreted in combination with the radargrams, which visualise the form of the geophysical response, aiding anomaly interpretation
- 5.3.3. The Geophysical results have been interpreted using greyscale images in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology mapping. Google Earth (2021) was also consulted, to compare the results with recent land use
- 5.3.4. The Geodetic position of results – All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

6. Results

6.1. Qualification

6.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified reflections is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all reflection sources. Where possible, a reflection source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports, as well as reports from further work, in order to constantly improve our knowledge and service.

6.2. Discussion

6.2.1. EM survey was conducted over 4.9ha, with GPR undertaken across smaller, targeted areas within the footprint of the EM survey. Areas for targeted GPR survey were chosen across a range of high to low conductivity areas to provide comparative datasets and help substantiate their respective interpretations. The GPR technique has achieved effective signal penetration to a depth of up to c. 4m; any targets that may exist beyond this depth will not have been identified. The EM survey has detected good contrasts across the survey area and provided bulk volume measurements at nominal depths up to c. 3.5m BGL. Zones of highest risk of potential dissolution features have been identified within Areas 3 and 4.

6.2.2. The EM data are characterised by broad contrasts (Figures 3-5), considered likely to reflect the differences in mineral content and hydrological conductivity of the contrasting bedrock formations, although numerous variables influence the EM conductivity. The bands of lower conductivity measured in the northern portion of the survey area correspond well with the extent of the mapped chalk bedrock, while the higher conductivity measured across the central and southern parts are likely to reflect the transition to the recorded clays, silts and sands. The strongest conductivity values across the central zone may be the result of factors such as greater ground saturation or a greater proportion of clay (the mineral content of which typically facilitates greater electrical conductivity), perhaps with slightly better-drained river terrace gravels distributed towards the southern boundary (BGS borehole data indicates such deposits immediately outside the survey area (BGS 2021)). There is minimal lateral variation in the EM anomalies between the three depths of investigation (Figures 3, 4 & 5).

6.2.3. The survey results show several amorphous low amplitude features in the GPR data (Figure 8), positioned within an area of high conductivity detected by the EM survey, GPR Areas 3 and 4 (Figures 2, 3-5). This area was previously identified as having a higher risk of dissolution features. The low amplitude features possibly represent dissolution channel and depressions containing a non-homogenous fill given the nature of their reflections, morphology and location. A wider and shallower feature was detected

within GPR Area 1, this has been highlighted as another potential solution feature; however, given the minimal variation indicated in the EM dataset it is possible that this is a variation on the surface of the chalk bedrock itself. None of the other GPR areas appear to contain high risk features within the GPR data.

6.2.4. Reflectors corresponding with the extant golf course feature have also been identified throughout the GPR dataset. These are consistent with with buried surfaces, compacted layers, disturbed ground, rubble backfill and drainage features. This interpretation is supported by the close correlation of many of these with features visible on recent satellite imagery (Google Earth, 2021).

6.3. Interpretation

6.3.1. General Statements

6.3.1.1. Geophysical results will be discussed broadly as classification types across the survey area. Only reflections that are distinctive or unusual will be discussed individually.

6.3.1.2. **‘Ringing’ or ‘Shadows’** – Ringing in GPR data is an effect whereby a specific material (usually metal objects, but not always) causes the radar energy to behave in an unusual way, producing strong amplitude responses within the radargram well below the object in question. These can make it appear as though there are deeper reflectors present, when in fact this is a data artefact caused by an object higher up in the soil or sediment.

6.3.1.3. **Undetermined** – Reflections are classified as Undetermined when the source of the reflection is ambiguous and there is no supporting or contextual evidence to warrant a more certain classification. These reflections are typically likely to be the result of either geological or soil processes, or recent anthropogenic activities, although an archaeological origin cannot be entirely ruled out.

6.3.2. Specific Results and Reflections

Area 1

6.3.2.1. **EM** – Area 1 is located in an area of low conductivity identified by the EM survey (Figs 3-6). The low conductivity is likely to represent the areas recorded chalk geology and a low water content.

6.3.2.2. **GPR Natural (Background)** – Reflectors were detected in Area 1 that could be identified as having their origin in natural variations in the underlying geology. Two parallel sinuous linear anomalies cross the south of Area 1 in a northeast-southwest direction. These anomalies are visible at 0.80m – 1.20m depth and appear natural in morphology. The north of Area 1 is therefore deemed to have a relatively homogenous geology and superficial deposits whilst the south shows more variation.

6.3.2.3. **GPR Natural (Possible Dissolution) (SU 71430 76905)** – In the south of Area 1 a depression has been detected. The reflections are at their widest c.20m diameter at a depth of 0.67, and they reduced to a diameter of c.6m at a depth of 1.07m. The

radargram of the area (Figure 14) shows a sloping, likely natural, surface. It is probable that this is a shallow depression with a natural fill in the underlying geology however further investigation is needed to fully determine its nature.

Areas 3 & 4

- 6.3.2.4. **EM** – Areas 3 & 4 are located within an area of high conductivity identified by the EM survey (Figs 3-6). The high conductivity is likely to relate to the areas' geology and the water content of the ground. The recorded bedrock in this area consists of Seaford and Newhaven chalk formation, however, is close to a change in recorded bedrock to clay, silt and sand (see Section 4.3). It is possible therefore that the areas of natural variation identified using GPR (sections 6.3.2.5-6) may be areas of chalk dissolution, or may be recording a change in geology to the recorded clays, silts and sands. It is worth noting that in the magnetic data (Langston, A., *et al.* 2020) drains were recorded in this area indicating a naturally wet environment needing management to ensure adequate drainage.
- 6.3.2.5. **GPR Natural (Background)** - In Areas 3 and 4 sinuous and amorphous reflections have been detected. These are visible as low and high amplitude responses in both the timeslices and radargrams (Figures 8, 13-14). The reflections appear between c.0.30m and 3m deep and exhibit slight changes in shape and position with increasing depth. It is possible that a reflector in the northeast of Area 3 is related to the edge of a former sandpit however given its morphology is considered more likely to be natural. These anomalies occur in an area of high conductivity (Figures 3-5) which coincides with the areas marked medium risk for chalk dissolution hazards (Geo-Environmental, 2020). The morphology and signal of these features is suggestive of a variable bedrock surface or changes in the overlying natural deposits rather than large dissolution hollows or channels.
- 6.3.2.6. **GPR Natural (Possible Dissolution) (SU 71565 76898 & SU 71542 76928)** - In the southeast of Area 3 an anomaly larger than those discussed as natural background (Section 6.3.2.5) have been detected at c.0.95m deep [3a] (Figure 8). In the north of Area 3 a reflector has been identified at 1.56m deep [3b] (Figure 8). Both 3a and 3b exhibit a curved 'bowl' shaped series of reflections in the radargrams (Figures 13-14). These do not exhibit a morphology in the timeslices typical of large dissolution features such as substantial infilled voids or channels in the underlying chalk, however their size means they are a larger variation in the bedrock or overlying deposits than the others identified. Further investigation would be needed to determine their full extent.

Areas 2 & 6

- 6.3.2.7. **EM** – Areas 2 and 6 are located within an area of low - medium conductivity identified by the EM survey. Both are however situated close to the band of high conductivity that is recorded running in the central and southern parts of the overall survey area. It is likely that the low conductivity recorded is the result of the underlying chalk geology with the increase in conductivity in the southeast of Area

2 and southwest of Area 6, due to a change in the underlying deposits and a potential increase in soil moisture.

- 6.3.2.8. **Natural (Background)** – In Areas 2 and 6 sinuous and amorphous reflections have been detected. These are visible as low and high amplitude responses in the timeslices (Figures 7 & 10). The reflections appear between c.0.30m and 2.5m deep and exhibit changes in shape and position at differing depths. Whilst some could be related to land management in the golf course, in morphology and response they look similar to the natural variations seen in Areas 3 and 4. The morphology and signal of these features is suggestive of variable underlying natural deposits rather than large dissolution hollows or channels.

Area 5

- 6.3.2.9. **EM** – Area 5 is located in an area of low conductivity identified by the EM survey (Figs 3-6). The low conductivity is likely to be caused by the areas chalk geology and a low water content.

- 6.3.2.10. **Natural** - No reflectors were detected in Area 5 that could be confidently identified as having their origin in natural variations in the underlying geology. There were some discrete reflectors identified that have been ascribed an undetermined origin and whilst these may have a natural origin and reflect small changes in the underlying soils, their origin could not be confidently determined from the data alone.

Area 7

- 6.3.2.11. **EM** – The majority of Area 7 is located within an area of high conductivity, with its eastern extent located within an area of medium conductivity. Manmade drains have been identified in the GPR and magnetic data (Langston, A., *et al.* 2020). It is likely that the high conductivity is caused by the underlying gravel bedrock with a high clay content, causing a wetter environment and the need for drainage.

- 6.3.2.12. **Natural** – In Area 7 no reflectors have been detected of a natural origin. The area on satellite imagery (Google, 2021) can be seen to have been heavily landscaped, and various reflectors considered likely to be disturbed and made ground and drainage pipes have been detected. It is therefore likely that any natural variations present are masked by these later additions.

7. Conclusions

- 7.1. EM survey was successfully completed across 4.9ha of the survey area, with GPR undertaken across smaller targeted areas within the footprint of the EM survey. GPR areas were targeted in a range of high to low conductivity zones of the EM data to provide comparison datasets, as well as to further inform interpretation. Both techniques have generally responded well to the environment of the survey area allowing the identification of three zones of increased risk for dissolution features, most notably within Areas 3 and 4. A further feature within Area 1 also warrants further investigation, though may be indicative of bedrock variation.
- 7.2. Areas 3 and 4 fall within a zone of high conductivity in the EM dataset, and in the transition zone between the chalk and the clay, silt, sand and gravel bedrock geologies. Most of the reflections identified with the GPR data in these areas are relatively small and may be considered shallow variations in the chalk bedrock that have then been infilled naturally, often not apparent in radargrams. Larger variations noted in these areas, while not conclusive, are considered of higher risk for dissolution features. These have a 'bowl' shape series of reflections in the radargrams.
- 7.3. A shallower, but morphologically similar, reflector was identified within Area 1. This is located in an area of lower conductivity with little variation, suggesting a more homogenous chalk bedrock geology. The shallow reflector may be a variation in the surface of the bedrock, however, warrants further investigation.
- 7.4. The majority of the remaining GPR areas are located within the low to mid-range of the conductivity dataset, none of which appear to contain reflectors suggesting high risks of dissolution features. Area 7, in the southwest, is in a zone of high conductivity but this is likely due to difference in the bedrock of this area, on gravels with a high clay content rather than as a dissolution or transitional zone.
- 7.5. Golf course features and drainage, visible as reflections in both timeslices and radargrams, have been identified in various areas, some of which correspond with extant features visible on satellite imagery.
- 7.6. Reflectors classified as "Undetermined" within the GPR data often have similar morphology and/or amplitude to those identified as golf course features or natural variations. None of these anomalies are indicative of dissolution features; however, it has not been possible to definitively classify them further.

8. Archiving

- 8.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.
- 8.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

9. Copyright

- 9.1. Copyright and intellectual property pertaining to all reports, figures, and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

10. References

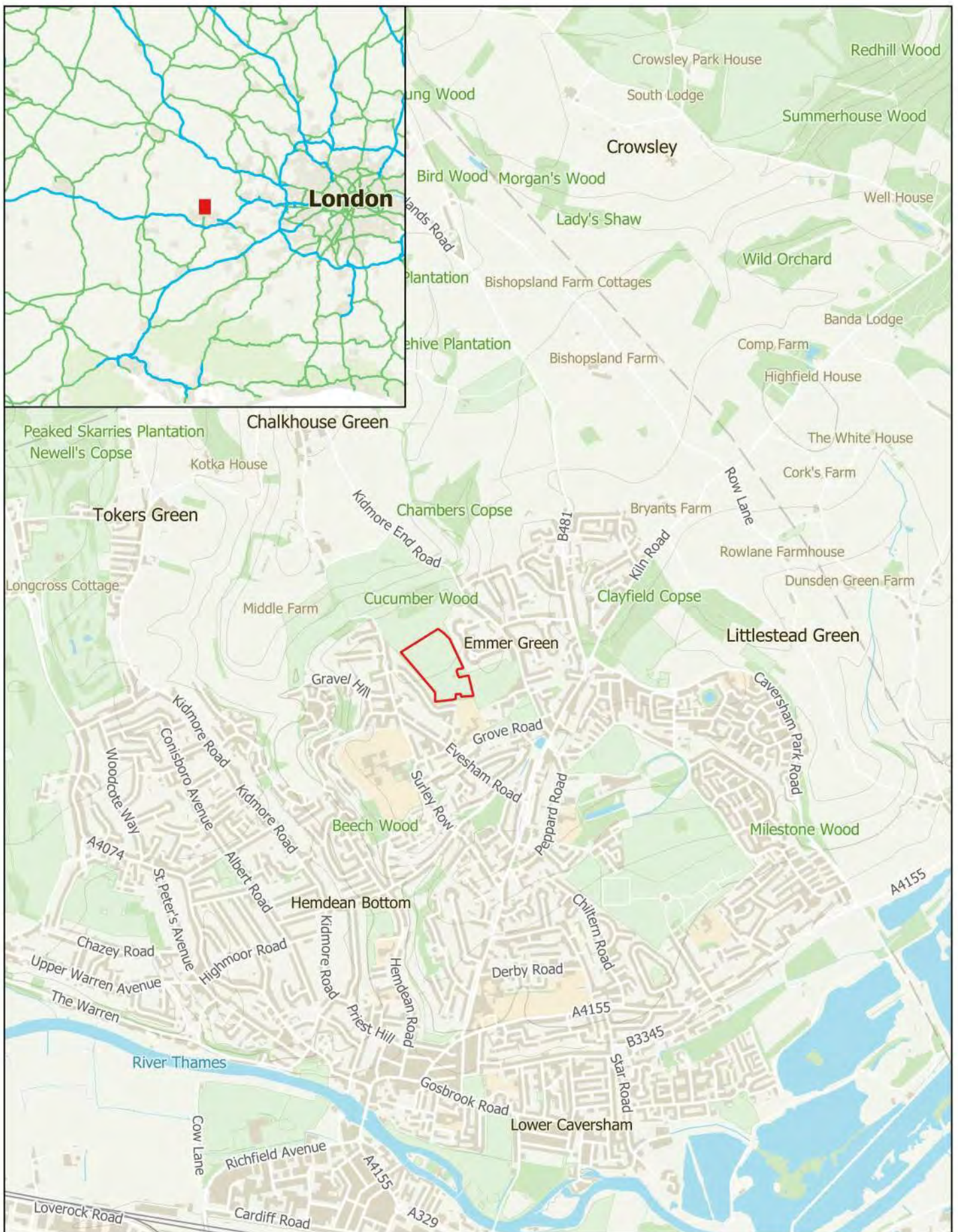
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11. Project Metadata

MS Job Code	MSSU986
Project Name	Reading Golf Club
Client	Geo-Environmental Services Limited
Grid Reference	SU 71483 76927
Survey Techniques	Electromagnetic Induction – Conductivity and Magnetic Susceptibility, Ground Penetrating Radar
Survey Size (ha)	c. 4.9ha (Electromagnetic Induction), c. 1.9ha (Ground Penetrating Radar)
Survey Dates	2021-06-29 to 2021-07-07
Project Lead	Christian Adams BA MSc ACIfA
HER Event No	N/A
OASIS No	N/A
S42 Licence No	N/A
Report Version	1.0

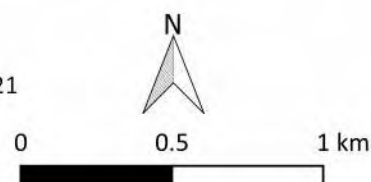
12. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	S.P & P.F.P	C.A.	23 July 2021
0.2	2 nd draft for Project Lead to Review	L.J	H.B	26 July 2021
0.3	3 rd draft for Project Lead to Review	L.J & L.S	F.P.C	02 August 2021
1.0	Report Issued as Final	C.A	C.A	29 September 2021

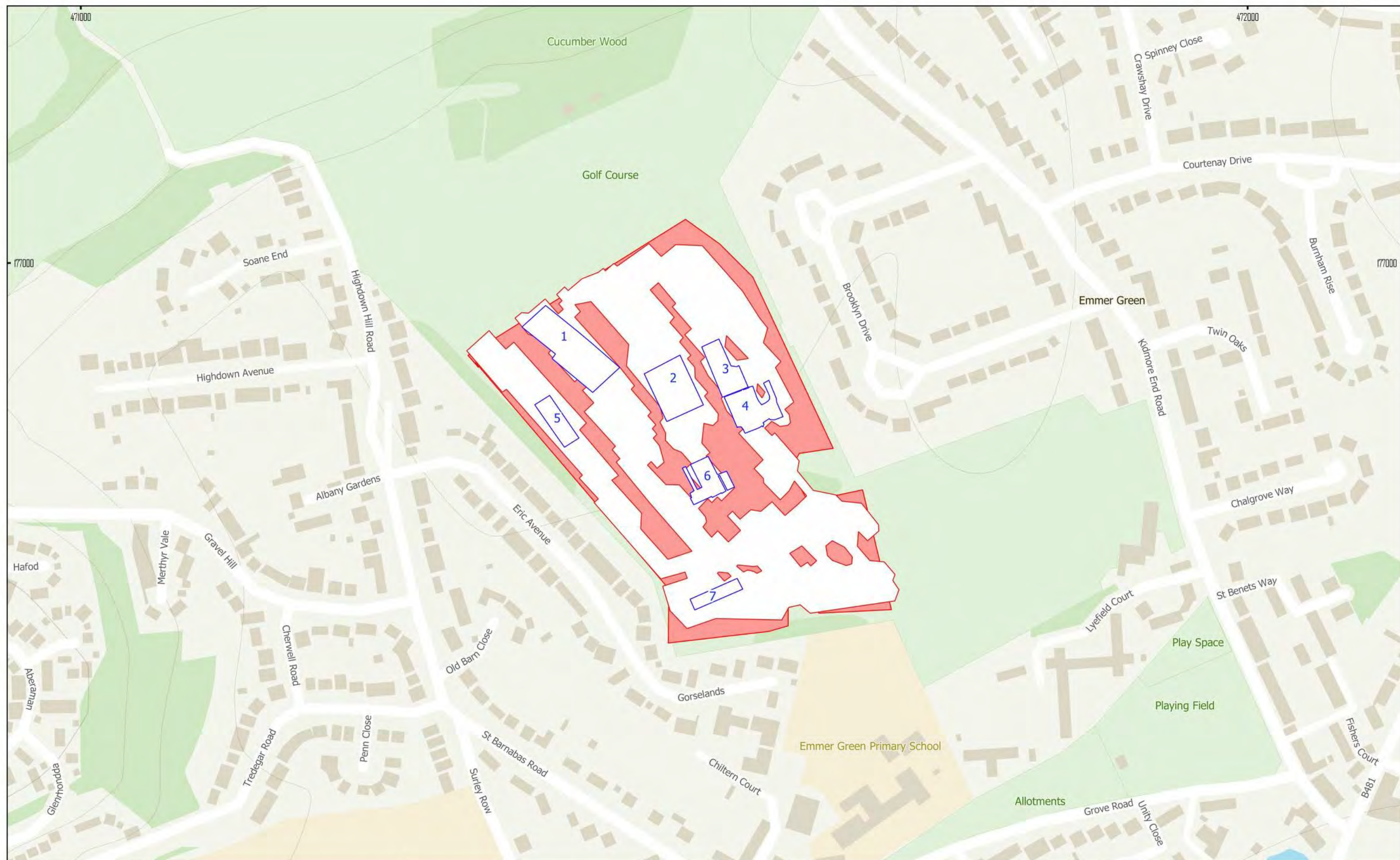


MSSU986 - Reading Golf Club
 Figure 1 - Site Location
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 Survey Area

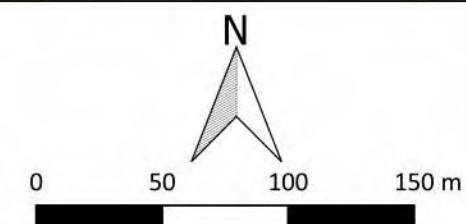


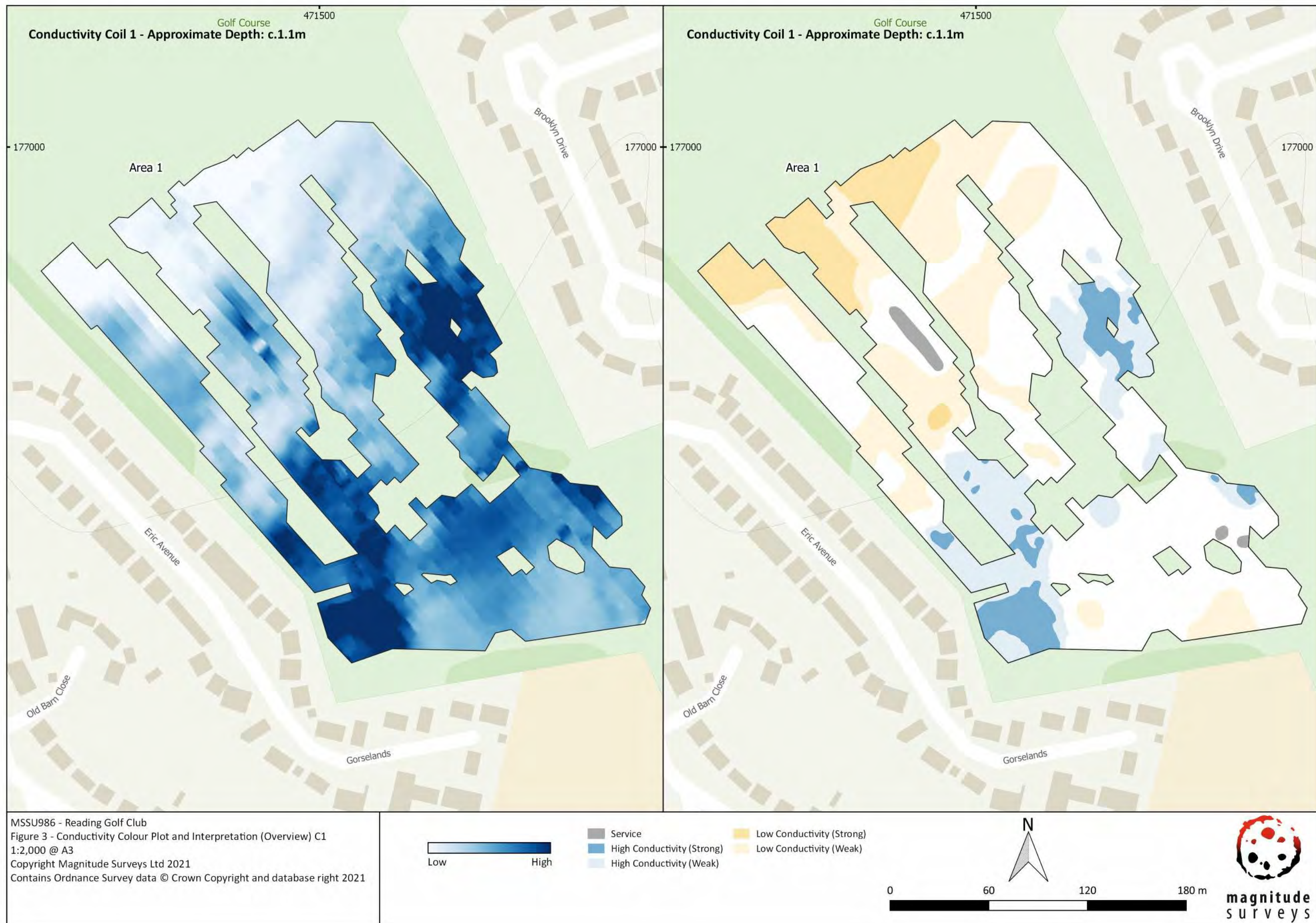
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surveys**

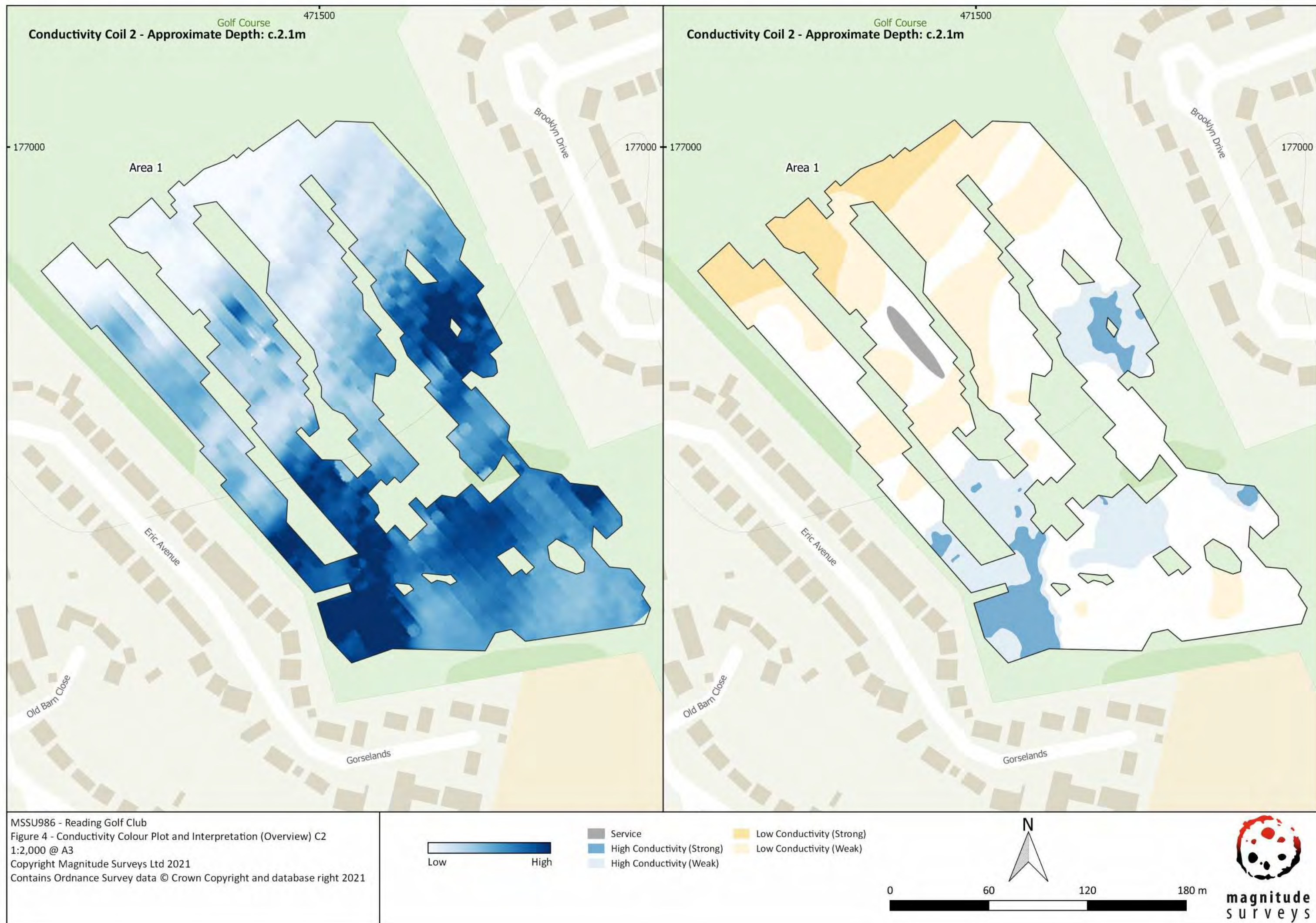


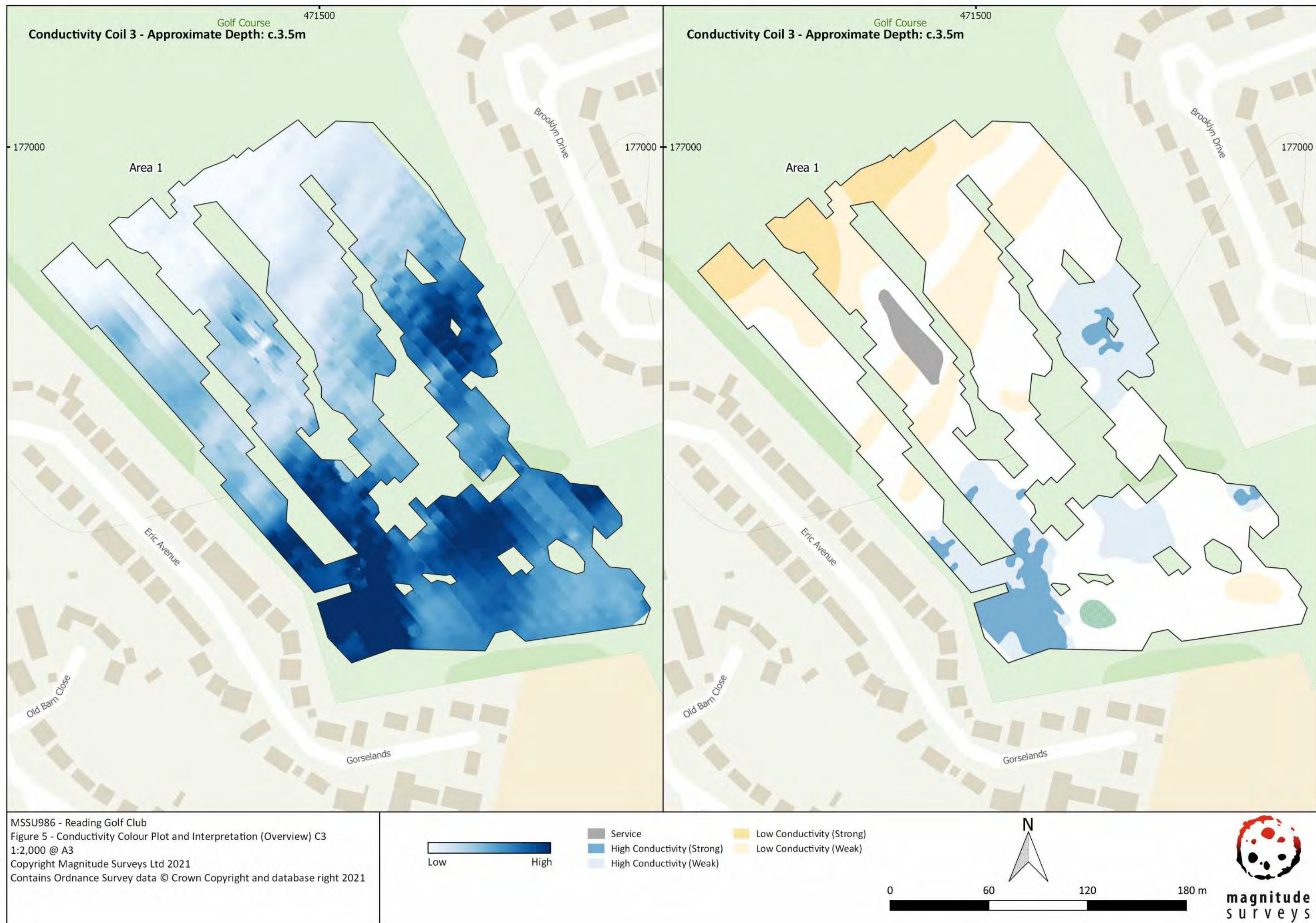
MSSU986 - Reading Golf Club
 Figure 2 - Location of Survey Areas
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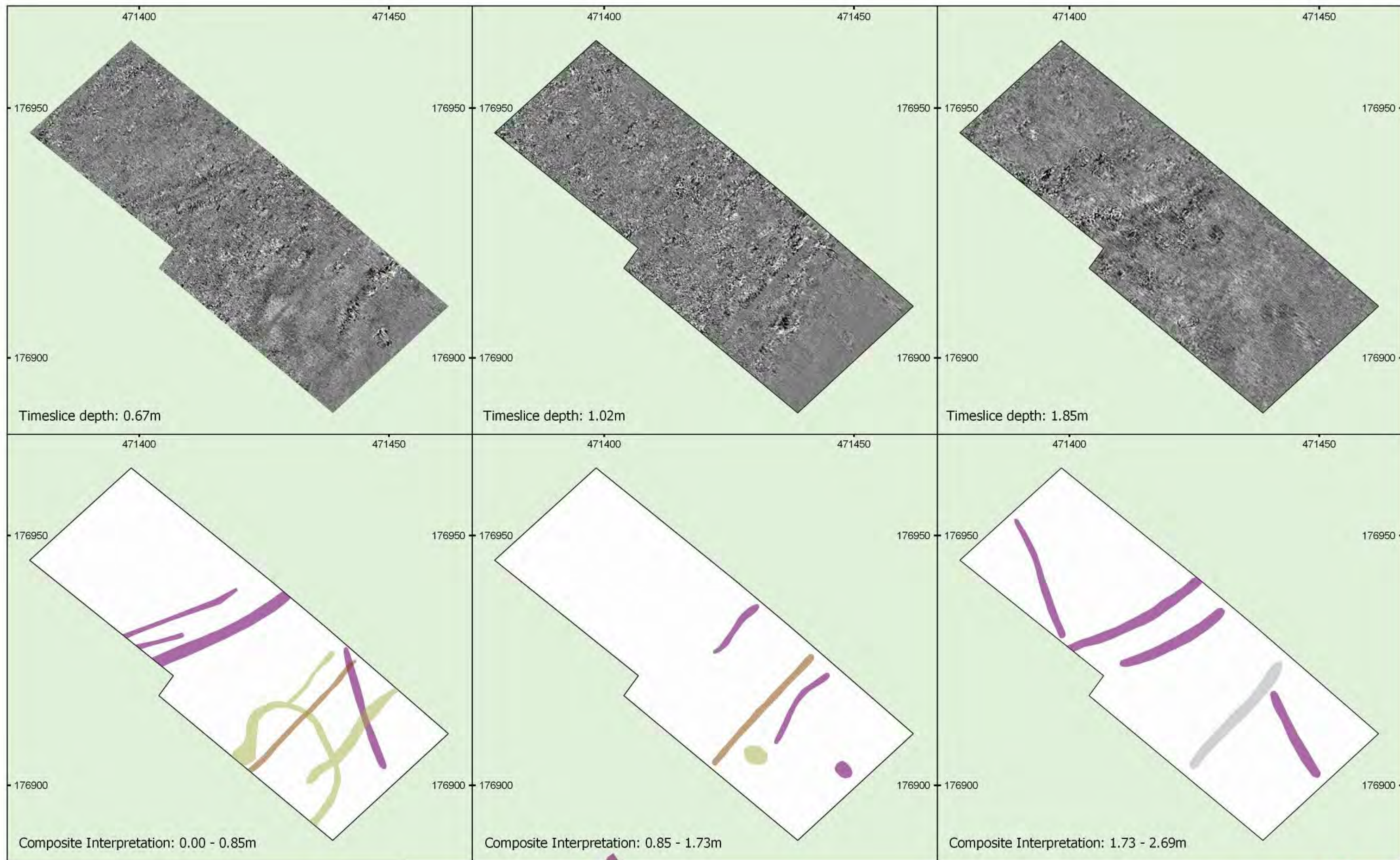
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- GPR Survey Areas
- Not surveyable







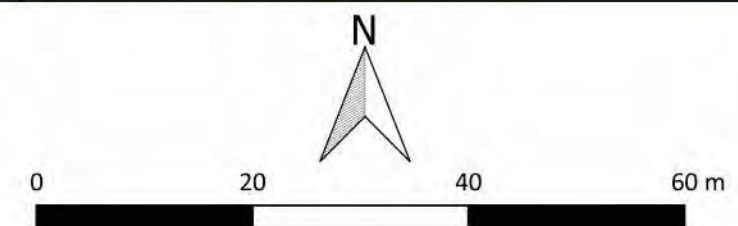


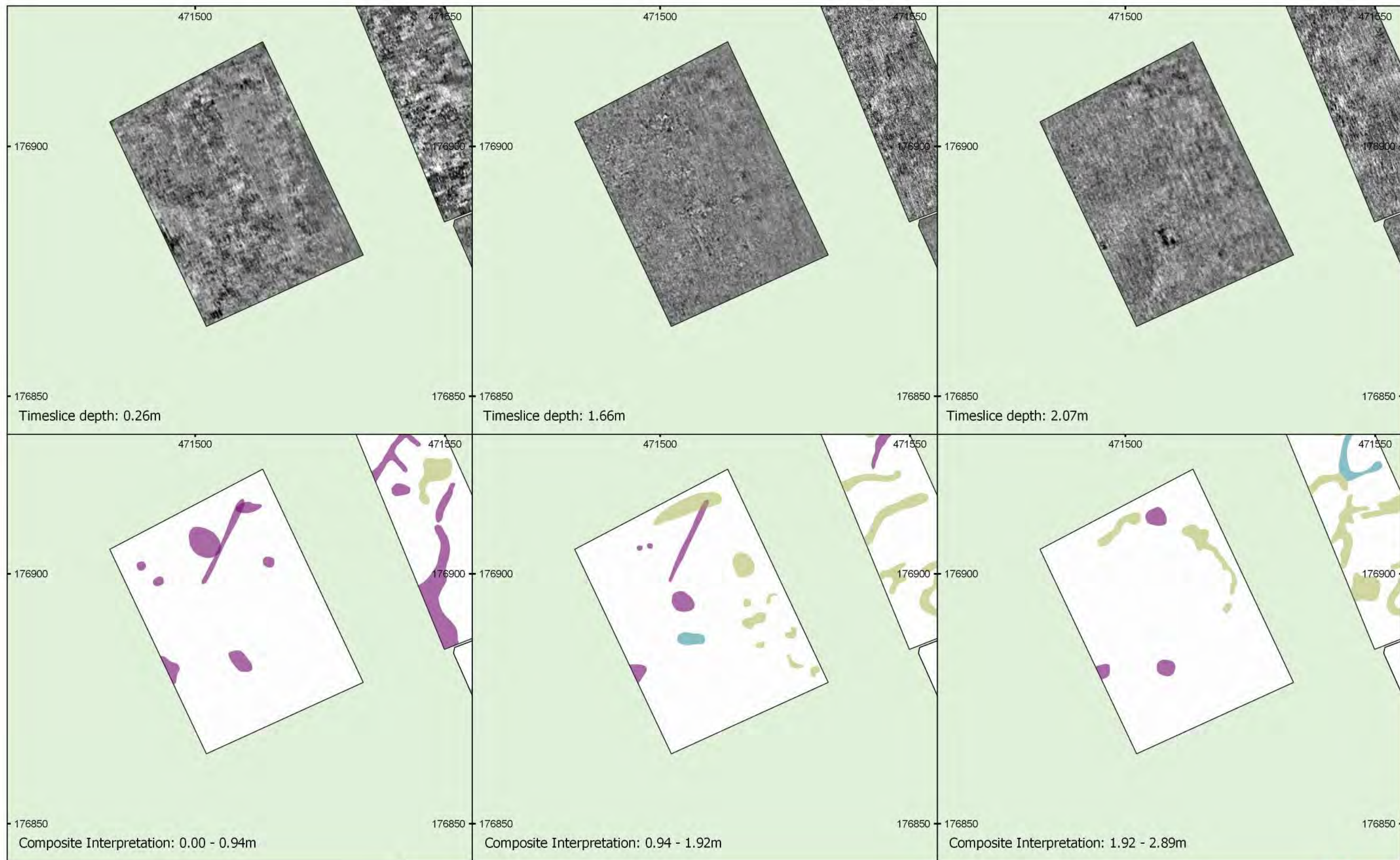


MSSU986 - Reading Golf Club
 Figure 6 - Area 1 GPR Interpretation (Indicative Timeslices and Composite Interpretation at Given Depths: shallow, medium, deep)
 1:700 @ A3
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- Natural
- Golf Course/Disturbed Ground
- Possible Drain
- Undetermined
- Shadow

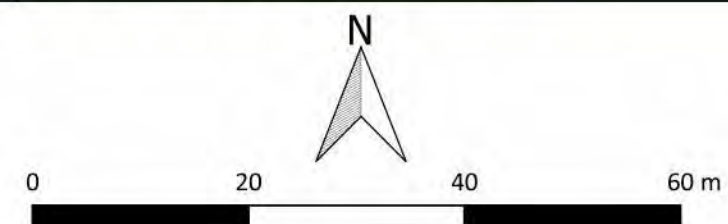


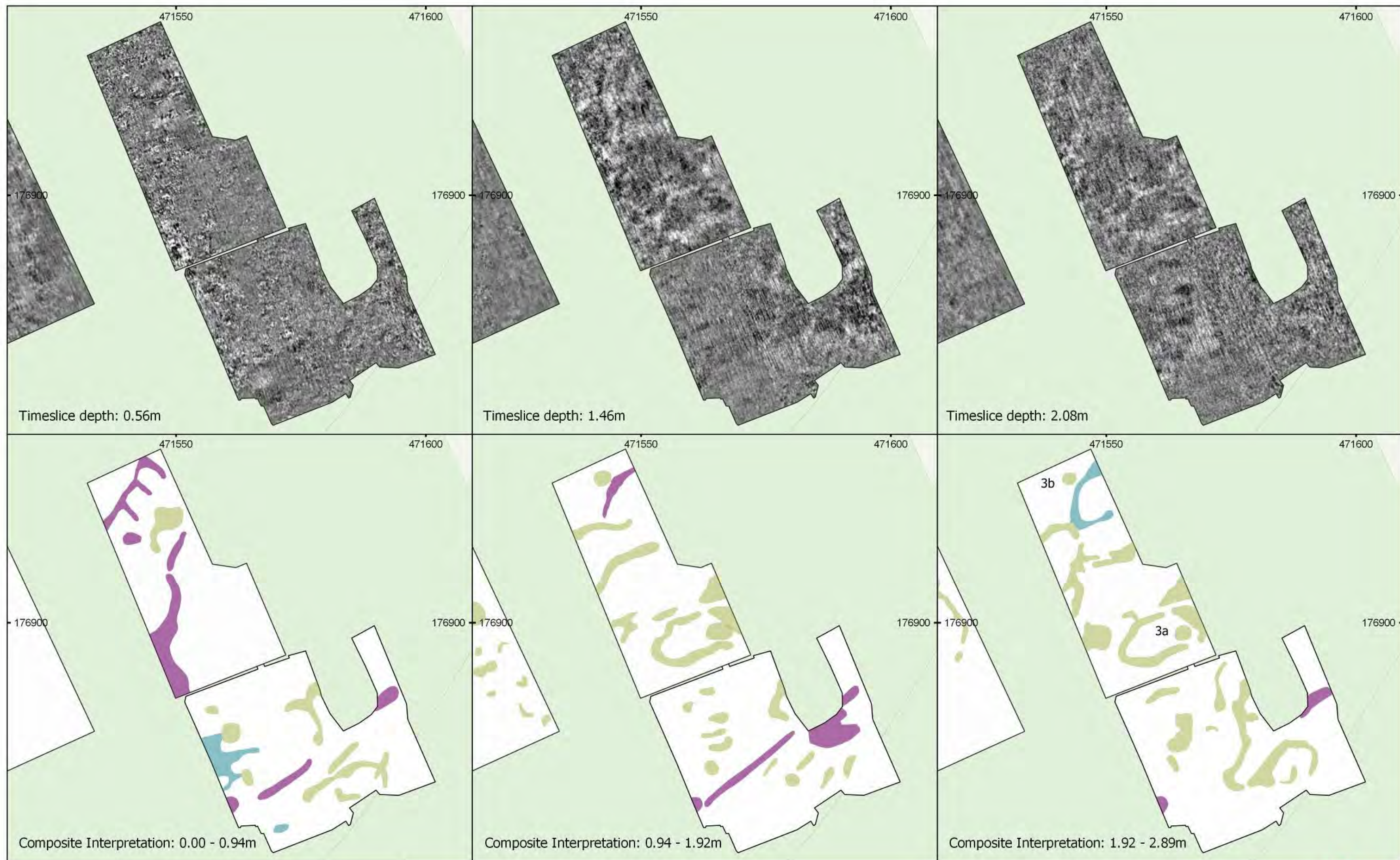


MSSU986 - Reading Golf Club
 Figure 7 - Area 2 GPR Interpretation (Indicative Timeslices and Composite Interpretation at Given Depths: shallow, medium, deep)
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- Natural
- Golf Course/Disturbed Ground
- Undetermined
- Shadow

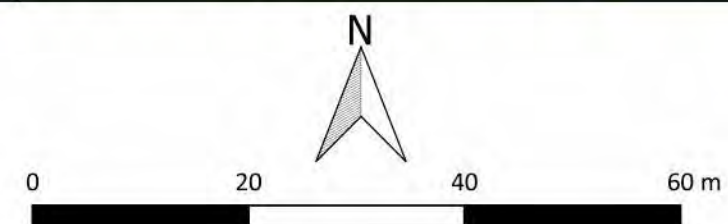


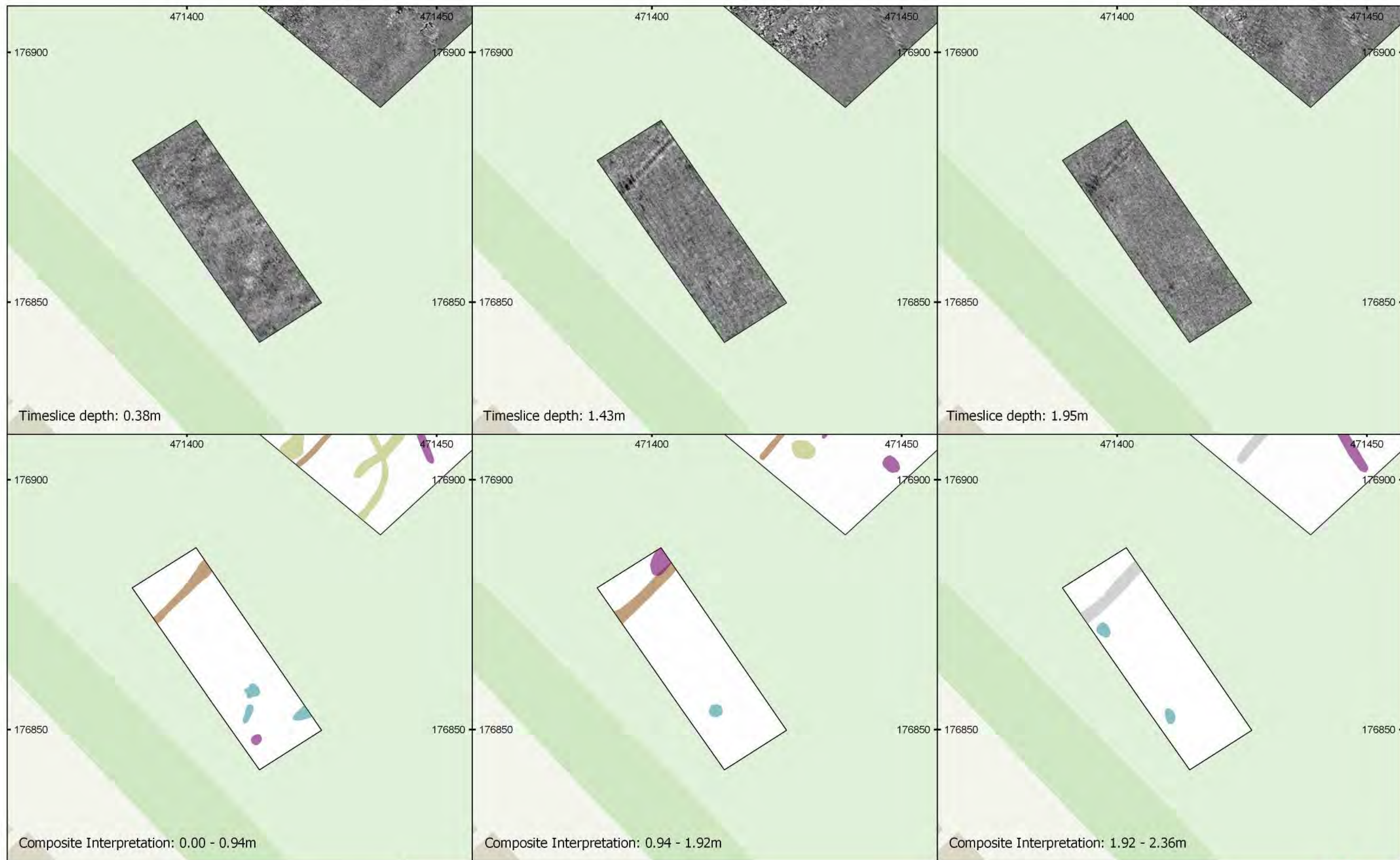


MSSU986 - Reading Golf Club
 Figure 8 - Areas 3 & 4 GPR Interpretation (Indicative Timeslices and
 Composite Interpretation at Given Depths: shallow, medium, deep)
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■ Natural
■ Golf Course/Disturbed Ground
■ Undetermined

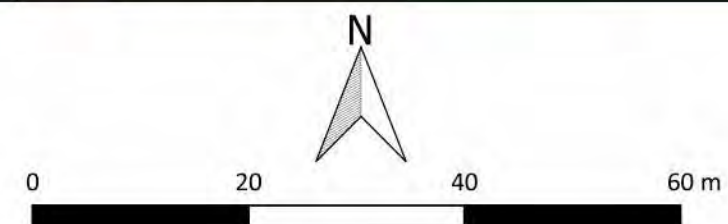


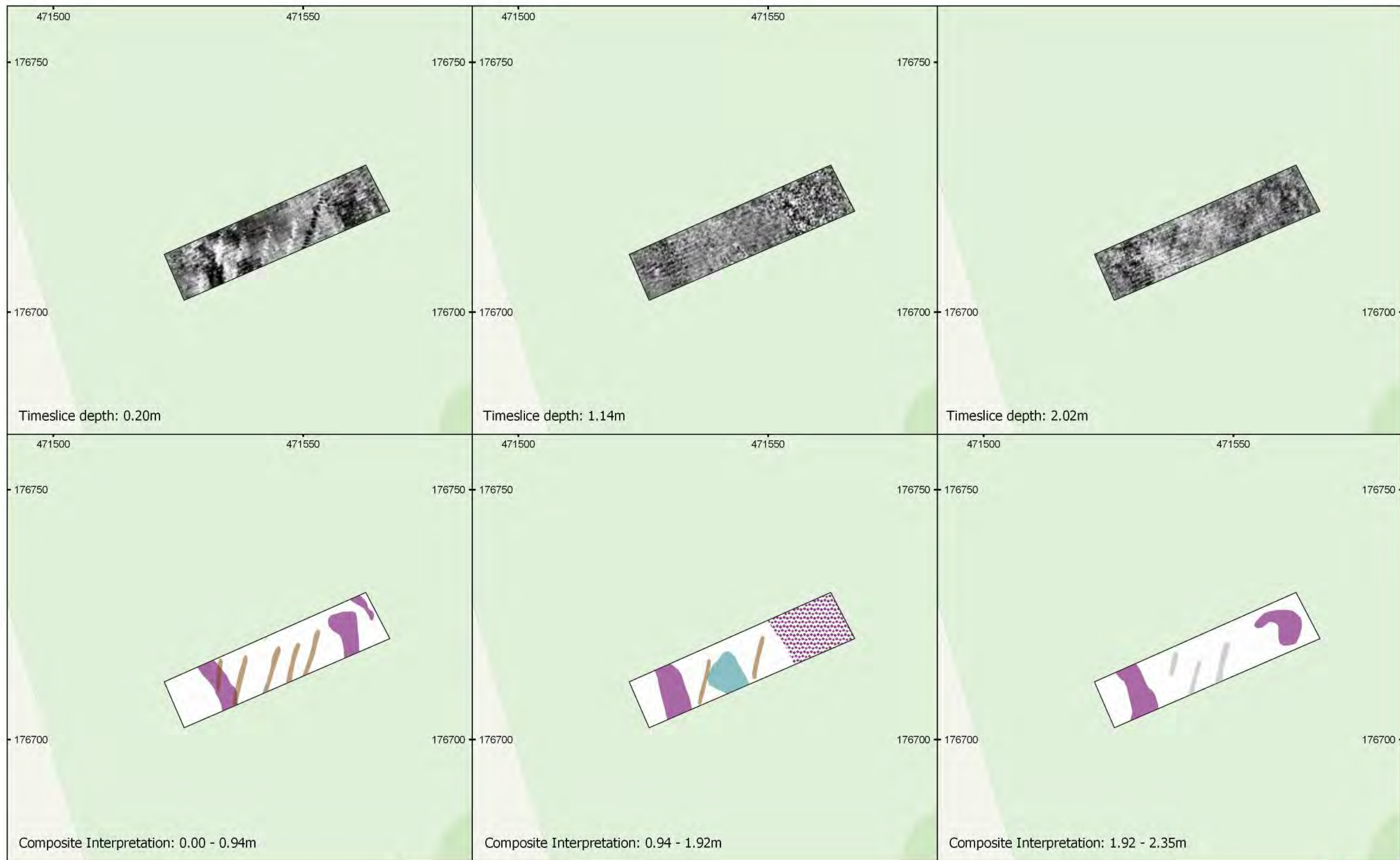


MSSU986 - Reading Golf Club
 Figure 9 - Area 5 GPR Interpretation (Indicative Timeslices and Composite Interpretation at Given Depths: shallow, medium, deep)
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- Golf Course/Disturbed Ground
- Possible Drain
- Undetermined
- Shadow

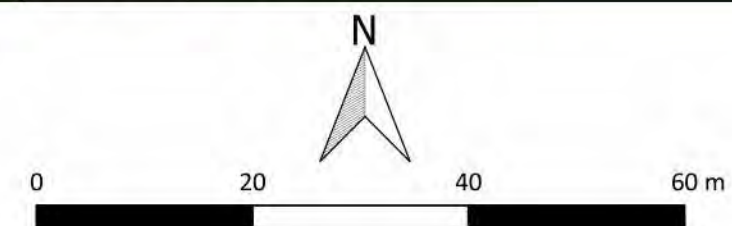


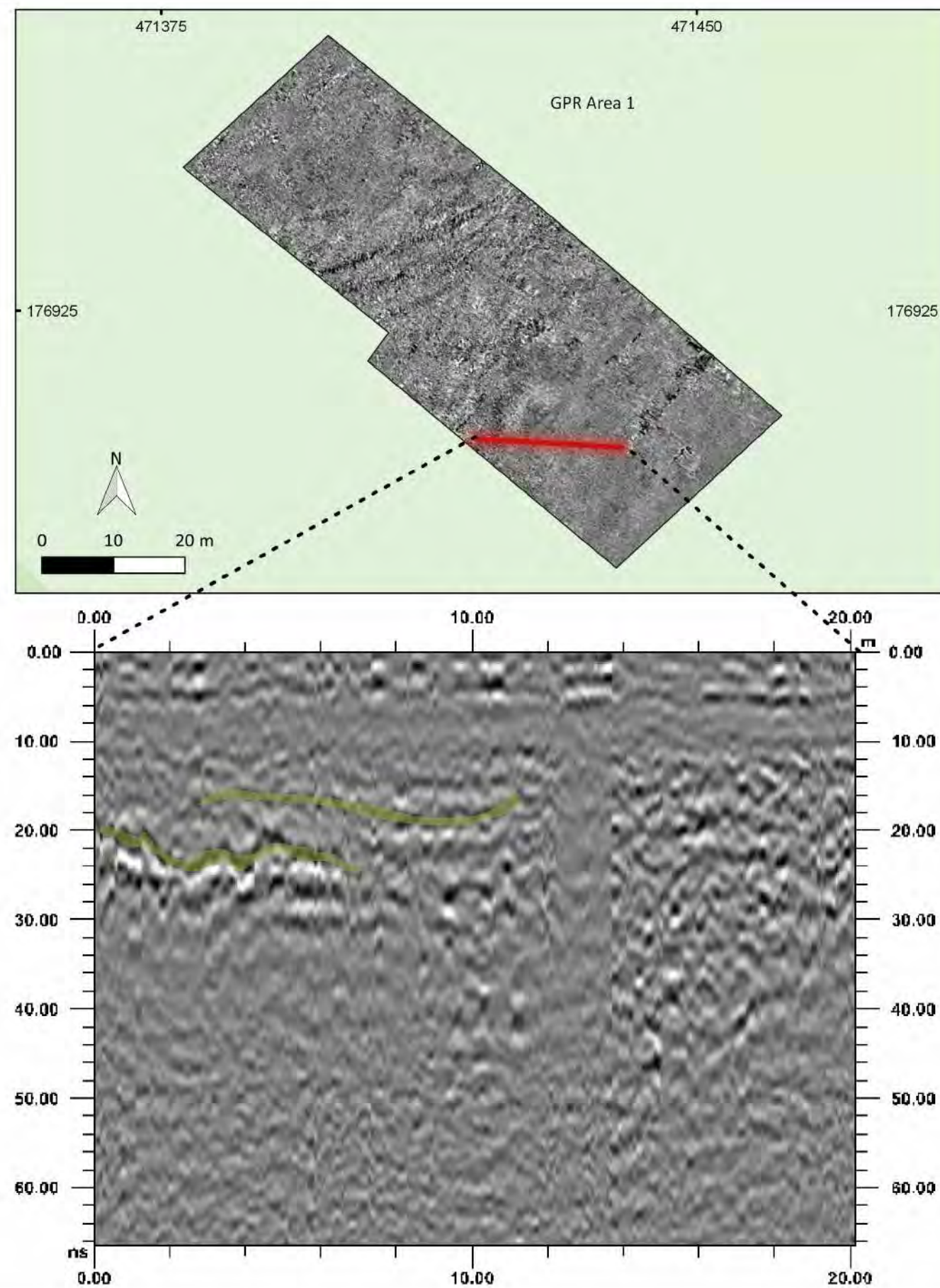


MSSU986 - Reading Golf Club
 Figure 11 - Area 7 GPR Interpretation (Indicative Timeslices and Composite Interpretation at Given Depths: shallow, medium, deep)
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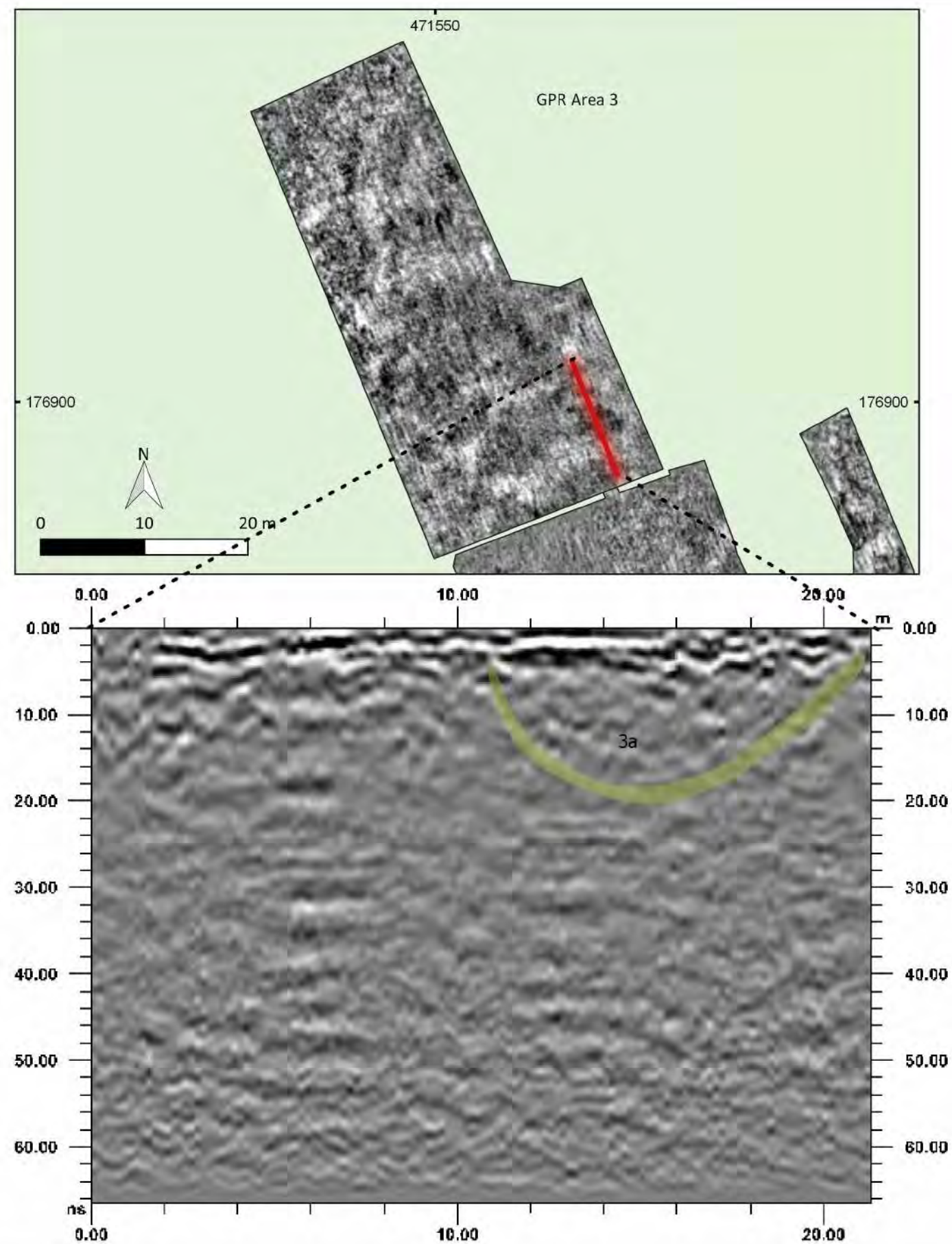
- | | |
|------------------------------|----------------|
| Natural | Possible Drain |
| Golf Course/Disturbed Ground | Undetermined |
| Unconsolidated material | Shadow |





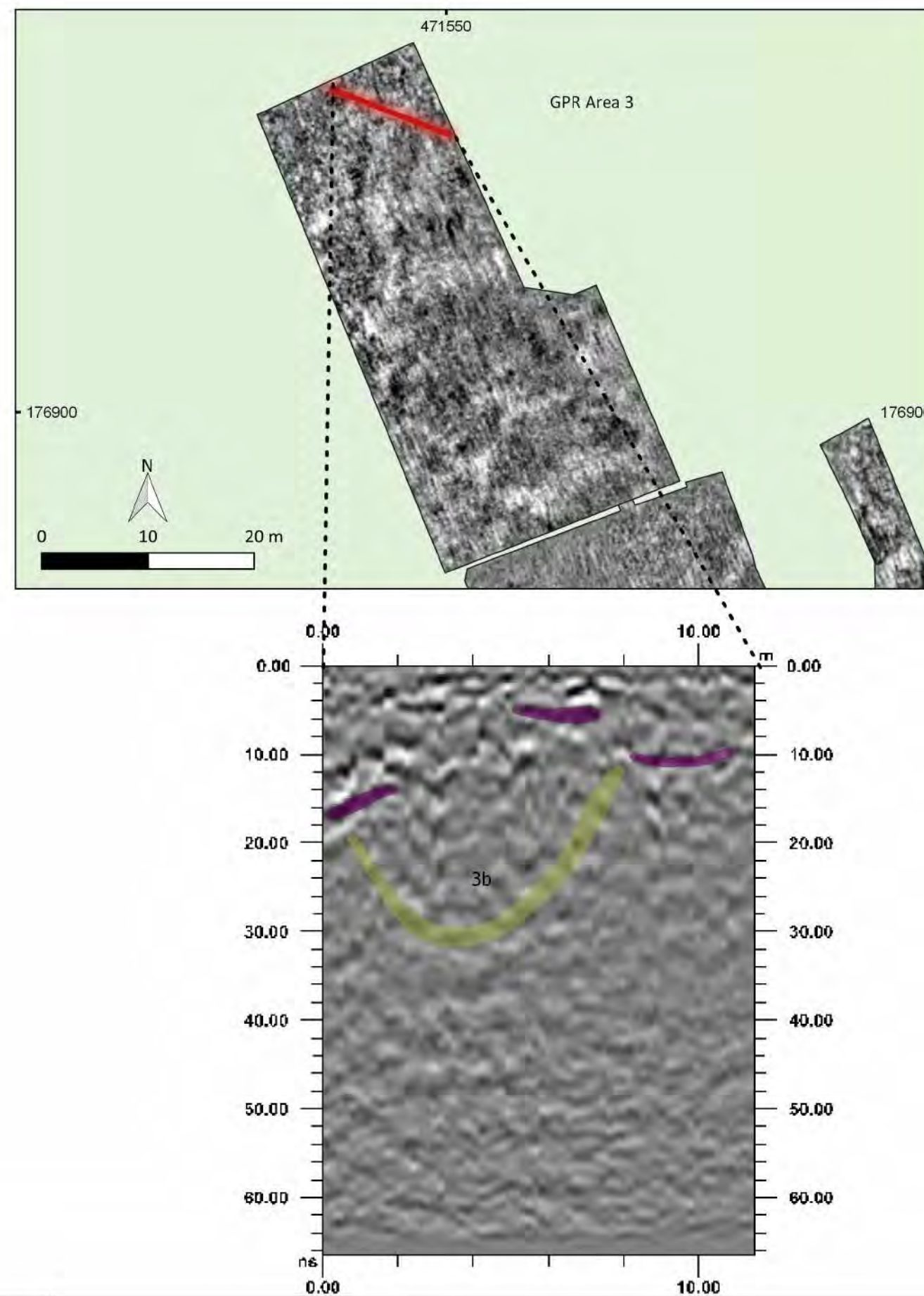
MSSU986 - Reading Golf Club
 Figure 12 - Area 1 Radargram with Interpretation
 $\text{Depth [cm]} = 9 \times \text{Time [ns]}/2$
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 Figure 13 - Area 3 Radargram with Interpretation [3a]
 $\text{Depth [cm]} = 9 \times \text{Time [ns]} / 2$
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 Figure 14 - Area 3 Radargram with Interpretation [3b]
 $\text{Depth [cm]} = 9 \times \text{Time [ns]}/2$
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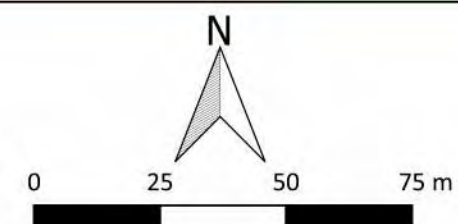


■ Golf Course/Disturbed Ground
■ Natural



MSSU986 - Reading Golf Club
 Figure 15 - Composite Interpretation EM & GPR
 1:1,500 @ A3
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- | | |
|----------------------------|------------------------------|
| High Conductivity (Strong) | Natural |
| High Conductivity (Weak) | Possible Drain |
| Low Conductivity (Strong) | Golf Course/Disturbed Ground |
| Low Conductivity (Weak) | Unconsolidated material |
| Service | Undetermined |



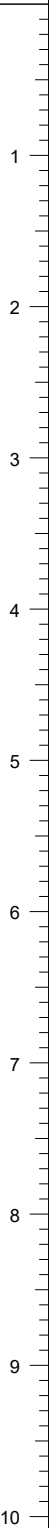


APPENDIX B

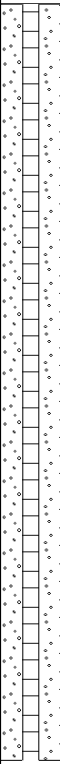
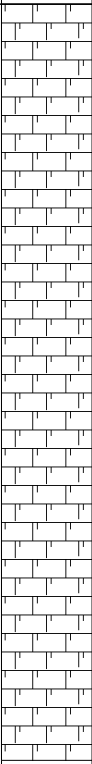
Exploratory Hole Logs & Dynamic Probe Results



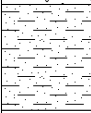
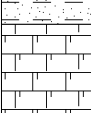
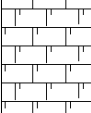
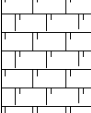
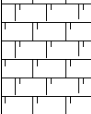
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. BH01 Sheet 1 of 2	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471527E - 176981N		Hole Type CP	
Location: Reading				Level: 77.84		Scale 1:50	
Client: Vistry Thames Valley				Dates: 15/07/2021		Logged By PL	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.30	77.54		Grass over topsoil. TOPSOIL		
	0.50 - 1.00	B	N=23 (3,4/5,6,5,7)	0.70	77.14		Brown gravelly CLAY BLACK PARK GRAVEL MEMBER			
	1.00	S		1.10	76.74		Firm to stiff brown gravelly CLAY. BLACK PARK GRAVEL MEMBER			
	1.45 1.50 - 2.00	D B					Medium dense brown clayey flint GRAVEL BLACK PARK GRAVEL MEMBER			
	2.00	S	N=25 (4,4/6,7,7,5)					2		
	2.45 2.50 - 3.00	D B								
	3.00 3.00 - 3.45 3.00	D B C		N=26 (4,5/7,6,7,6)						3
	4.00 - 4.45 4.00	B S	N=13 (2,3/3,3,3,4)		3.90	73.94		Recovered as off-white to white structureless CHALK composed of silt to gravel size chalk with some coarse gravel to cobble size flint. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION		4
	5.00 - 5.45 5.00	B C			N=14 (2,2/3,4,5,2)					
	6.50	S		N=19 (2,3/4,4,6,5)		6.70	71.14			Recovered as white CHALK composed of very weak to weak clasts and some gravel to cobble size flint. No CIRIA Grade assigned due to method of drilling. SEAFORD CHALK FORMATION
	6.95	D								
	7.50	D	N=28 (4,5/7,7,7,7)		8.00					8
	8.45	D		N=35 (5,5/8,9,9,9)	8.50	69.34		Recovered as white CHALK composed of weak to moderately weak clasts and some flint of gravel and cobble size. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION		9
	9.00	D								
	9.50	S								
		9.95	D							
Continued on Next Sheet										

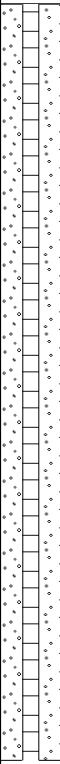
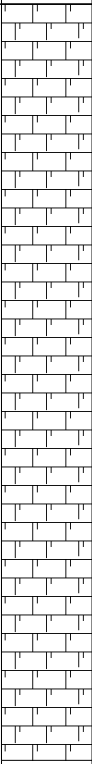
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
150	6.00	3.60	3.40	4.50 8.50	5.00 9.00	1m Hand Pit Falling head test carried out at 15m bgl.	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. BH01 Sheet 2 of 2						
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471527E - 176981N		Hole Type CP						
Location: Reading				Level: 77.84		Scale 1:50						
Client: Vistry Thames Valley				Dates: 15/07/2021		Logged By PL						
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		10.50	D	N=55 (6,6/10,13,15,17)	15.00	62.84		Recovered as white CHALK composed of weak to moderately weak clasts and some flint of gravel and cobble size. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION	11			
		11.00	S									
		11.45	D									
		12.00	D								12	
		12.50	S	N=39 (6,6/9,9,10,11)								
		12.95	D								13	
		13.50	D									
		14.00	S	N=63 (7,8/12,14,17,20)								14
		14.45	D									
		15.00	D									15
End of Borehole at 15.00m									15			
									16			
									17			
									18			
									19			
									20			
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks						
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to							
150	6.00	3.60	3.40	4.50 8.50	5.00 9.00							
						1m Hand Pit Falling head test carried out at 15m bgl.						

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. BH02 Sheet 1 of 2	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471599E - 176756N		Hole Type CP	
Location: Reading				Level: 82.08		Scale 1:50	
Client: Vistry Thames Valley				Dates: 16/07/2021		Logged By PL	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.40	81.68		Grass over topsoil with tree roots. TOPSOIL			
		0.50 - 1.00	B					Medium dense to dense brown clayey flint GRAVEL BLACK PARK GRAVEL MEMBER	1		
		1.00 - 1.45	B	N=19 (4,5/1,1,8,9)							
		1.00	C								
		1.50 - 2.00	B								
				2.00 - 2.45	B	N=33 (4,4/2,9,10,12)					
				2.00	C						
				2.50 - 3.00	B						
				3.00	S	N=16 (2,2/3,4,4,5)	2.70	79.38		Firm to stiff brown and grey sandy CLAY. LAMBETH GROUP	3
				3.45	D						
				4.00	S						
				4.45	D	N=18 (2,3/4,4,5,5)					
				4.80	D						
				5.00	S						
				5.45	D	N=20 (2,3/4,5,5,6)	5.60	76.48		Stiff brown sandy CLAY. LAMBETH GROUP	
				5.80	D						
				6.00	D						
				6.50	S	N=105 (10,10/19,22,29,35)				White and off-white CHALK composed of silt to gravel sized clasts of very weak to weak chalk and some gravel to cobble size flint. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION	6
				6.95	D						
				7.50	D						
		8.00	S	86 (10,10/86 for 150mm)	7.10	74.98		Recovered as white CHALK composed of weak clasts and some gravel to cobble size flint. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION	7		
		8.45	D								
		9.00	D								
		9.50	S	87 (8,8/87 for 150mm)					8		
		9.95	D								
Continued on Next Sheet									10		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks 1m Hand Pit Falling head test carried out at 15m bgl.	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
150	6.00			7.10 9.00	9.00 15.00		

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. BH02 Sheet 2 of 2				
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471599E - 176756N		Hole Type CP				
Location: Reading				Level: 82.08		Scale 1:50				
Client: Vistry Thames Valley				Dates: 16/07/2021		Logged By PL				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		10.50	D	86 (11,11/86 for 150mm)	15.00	67.08		Recovered as white CHALK composed of weak clasts and some gravel to cobble size flint. No CIRIA Grade assessed due to method of drilling. SEAFORD CHALK FORMATION	11	
		11.00	S							12
		11.45	D							13
		12.00	D	82 (12,12/82 for 150mm)						14
		12.50	S							15
		13.50	D							16
		14.00	S	N=57 (7,7/8,13,17,19)						17
		14.45	D						18	
		15.00	D						19	
End of Borehole at 15.00m								20		
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks 1m Hand Pit Falling head test carried out at 15m bgl.				
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to					
150	6.00			7.10 9.00	9.00 15.00					
										

Trial Pit Log

TrialPit No
TP201
Sheet 1 of 1

Project Name: Reading Golf Course

Project No.
GE20079

Co-ords: 471534.71 - 176995.88
Level: 77.38

Date
14/07/2021

Location: Reading

Diagram of a rectangular box with dimensions: Depth 3.00, Width 2.00, and Height 0.50.

Scale
1:25

Logged
TM

Client: Vistry Thames Valley

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20	77.18		Turf covered sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse gravel is fine medium.
	0.50	D					TOPSOIL
	0.60	B					Soft to firm orangish brown very sandy gravelly CLAY with a low cobble content. Gravel is fine to coarse sand is fine to medium.
							BLACK PARK GRAVEL MEMBER
	1.00	D					Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc
	1.50	D					SEAFORD CHALK FORMATION
	2.00	D		2.10	75.28		
	2.50	D					
	3.00	D		3.00	74.38		End of Pit at 3.00m

Water Strikes	
Depth Strike	Rose to (mbgl)

Remarks

Stability	Sides stable
-----------	--------------

Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP202 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471515.44 - 176999.17 Level: 76.33		Date 14/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 2.90		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	Scale
	Depth	Type	Results					
				0.20	76.13		Turf covered sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse gravel is fine medium. TOPSOIL	
	0.50	D					Firm to stiff brown sandy gravelly CLAY with frequent rootlets and medium cobble content. BLACK PARK GRAVEL MEMBER	
	0.90	B		0.90	75.43		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	1
	1.00	D						
	1.20	PP	PP=2kg/cm2					
	1.50	D						
	2.00	B						2
	2.00	D						
	2.50	D						
	2.90	D		2.90	73.43		End of Pit at 2.90m	3
								4
								5

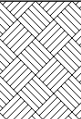
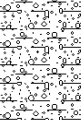
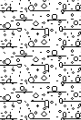
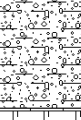
Depth Strike Rose to (img)	Water Strikes	Remarks Stability Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP203 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471500.67 - 176995.93 Level: 76.31		Date 14/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth 2.90 0.50		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20	76.11		Turf covered sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse gravel is fine medium. TOPSOIL	
	0.50	D					Firm to stiff brown sandy gravelly CLAY with frequent rootlets. BLACK PARK GRAVEL MEMBER	
	0.60	B						
	1.00	D						1
	1.50	D						
	1.50	PP	PP=0.75kg/cm2					
	1.75	PP	PP=1.75kg/cm2	1.70	74.61		Firm to stiff brown sandy gravelly CLAY with frequent rootlets and medium cobble content. BLACK PARK GRAVEL MEMBER	2
	2.00	D						
	2.50	D		2.45	73.86		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	
	3.00	D		2.90	73.41		End of Pit at 2.90m	3
								4
								5

Depth Strike Water Strikes	Remarks Notes to (img)	Spalling at clay chalk boundary Stability Localised spalling
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 Geo-Environmental		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP204 Sheet 1 of 1		
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471514.03 - 176983.61 Level: 77.10		Date 15/07/2021	
Location: Reading						Dimensions (m): 1.80 		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.00		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	Scale
	Depth	Type	Results					
				0.40	76.69		Turf covered brown sandy gravelly SILT with frequent rootlets gravel is medium and well rounded. TOPSOIL	1
	0.50 0.60	D B					Soft orangish brown sandy gravelly CLAY with a low cobble content. Gravel is fine to coarse angular to subangular. Sand is fine to coarse. BLACK PARK GRAVEL MEMBER	
	1.00	D						2
	1.50	D		1.60	75.50		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	
	2.00	D						
	2.50	D						3
	3.00	D		3.00	74.10		End of Pit at 3.00m	
								4
								5

Depth Strike 	Water Strikes (None to (m)g)	Remarks Stability Sides stable
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 Geo-Environmental		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP205 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471502.26 - 176980.02 Level: 77.00			Date 15/07/2021	
Location: Reading				Dimensions (m): 1.80 			Scale 1:25	
Client: Vistry Thames Valley				Depth 3.40			Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
							Turf covered brown sandy gravelly SILT with frequent rootlets gravel is medium and well rounded. TOPSOIL	
	0.50	D		0.35 0.40 0.40	76.65 76.60 76.60		Dark brown sandy gravelly SILT. Sand is fine to coarse and gravel is fine to medium subangular to subrounded. BLACK PARK GRAVEL MEMBER Dark brown sandy gravelly SILT. Sand is fine to coarse and gravel is fine to medium subangular to subrounded. Soft to firm orangish brown sandy gravelly CLAY. Sand is fine to coarse and gravel is fine to coarse subangular to subrounded. BLACK PARK GRAVEL MEMBER	1
	0.70	B						
	1.00	D						
	1.50	D		1.40	75.60		Soft to firm orangish brown very sandy gravelly CLAY with a medium cobble content of rinded flint. Sand is fine to coarse gravel is fine to coarse angular rinded flint. BLACK PARK GRAVEL MEMBER	2
	2.00	D		2.10	74.90		Loose orange clayey gravelly fine to coarse SAND with a medium cobble content. Sand is fine to coarse gravel is fine to coarse angular flint. BLACK PARK GRAVEL MEMBER	3
	2.50	D						
	3.20	D		3.40	73.60		End of Pit at 3.40m	4
								5

		Remarks Relative density assessed from DP2
		Stability Sides stable





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Trial Pit Log

Sheet 1 of 1

Project Name: Reading Golf Course

Project No.
GE20079

Co-ords: 471518.75 - 176975.95
Level: 77.64

Date
15/07/2021

Location: Reading

Diagram of a rectangular box with dimensions: Depth 3.01, Height 0.55, and Width 1.8.

Scale
1:25

Logged
TM

Client: Vistry Thames Valley

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.25	77.39		Turf covered brown sandy gravelly SILT with frequent rootlets gravel is medium and well rounded. TOPSOIL
	0.50	D					Firm to stiff brown sandy gravelly CLAY with frequent rootlets and medium cobble content. BLACK PARK GRAVEL MEMBER
	0.60	B					
	1.00	D					
	1.50	D					
	2.00	D		1.80	75.84		Firm to stiff brown sandy gravelly CLAY with frequent rootlets and medium to high cobble and boulder content. BLACK PARK GRAVEL MEMBER
	2.50	D		2.45	75.19		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION
3.00	D		3.01	74.63		End of Pit at 3.01m	
	</						

Water Strikes	
Depth Strike	Rose to (mbgl)

Remarks

Stability	Sides stable
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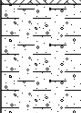
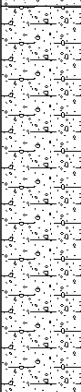


Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP207 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471581.01 - 176769.19 Level: 81.64		Date 14/07/2021	
Location: Reading						Dimensions (m): 2.00 0.55		Scale 1:25	
Client: Vistry Thames Valley						Depth 2.30		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	81.24		Turf covered brown sandy gravelly CLAY with frequent rootless. Sand is fine to coarse gravel is medium. TOPSOIL	
	0.50	D					Loose becoming medium dense orangish gravelly fine to coarse SAND with a medium cobble content. BLACK PARK GRAVEL MEMBER	
	0.60	B						
	1.00	D						
	1.50	D						
	2.00	D		2.10	79.54		Stiff brown and grey mottled CLAY with occasional roots and slight Reddish staining. LAMBETH GROUP	2
	2.20	PP	PP=2.5kg/cm2					
	2.30	D		2.30	79.34			
	End of Pit at 2.30m							3
								4
								5

Depth Strike Rosen to (m/kg)		Remarks	Relative density assessed from DP15
		Stability	Sides stable

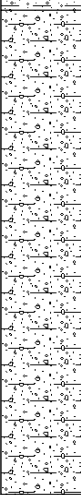
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP208 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471635.05 - 176783.21 Level: 81.30		Date 14/07/2021
Location: Reading				Dimensions (m): 2.00 		Scale 1:25
Client: Vistry Thames Valley				Depth 2.10		Logged TM

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	80.90		Turf covered sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse gravel is fine medium. TOPSOIL	
	0.50	D					Firm to stiff orangish brown sandy gravelly CLAY with frequent rootlets sand is fine to coarse and gravel is fine to coarse subangular to subrounded. BLACK PARK GRAVEL MEMBER	
	0.60	B						
	0.80	PP	PP=1.5kg/cm2	0.80	80.50		Loose becoming medium dense orangish brown clayey gravelly fine to coarse SAND with a high cobble content. Gravel is fine to coarse subangular to rounded. NOTE: Very loose to 2.1m bgl in DP9 BLACK PARK GRAVEL MEMBER	1
	1.00	D						
	1.50	D						
	2.00	D						2
				2.10	79.20		End of Pit at 2.10m	
								3
								4
								5

Water Strikes Depth Strike Rise to (m bgl)		Remarks Relative density assessed from DP7, DP8 & DP9
Stability Sides stable		



 Geo-Environmental		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP209 Sheet 1 of 1		
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471636.50 - 176752.37 Level: 82.31		Date 14/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth		Scale 1:25	
Client: Vistry Thames Valley						Depth 2.00		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30	82.01		Turf covered sandy gravelly SILT with frequent rootlets. TOPSOIL		
	0.50	D		0.40	81.91			Soft grey sandy gravelly CLAY sand is fine to medium. Gravel fine to medium subangular to subrounded. BLACK PARK GRAVEL MEMBER	
	0.60	B					Loose becoming medium dense orange clayey gravelly fine to coarse SAND with a low cobble content and firm gravelly CLAY pockets. Dense at 2.0m in DP11. BLACK PARK GRAVEL MEMBER		
	1.00	D							1
	1.30	PP	PP=1.5kg/cm2						
	1.50	D							
	2.00	D		2.00	80.31			End of Pit at 2.00m	2
									3
									4
									5

		Remarks Relative density assessed from DP11 and DP12. Some localised spalling. Stability Localised spalling
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 Geo-Environmental		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP210 Sheet 1 of 1		
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471657.44 - 176758.45 Level: 84.41		Date 14/07/2021	
Location: Reading						Dimensions (m): 2.00 0.55		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.00		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	84.01		Turf covered brown slightly gravelly sandy CLAY with frequent rootlets gravelly is find to medium rounded. TOPSOIL	
	0.50	D					Soft to firm orangish brown and grey mottled sandy CLAY with occasional to frequent roots. LAMBETH GROUP <i>Tree root 30mm dia.</i>	
	0.60	B						
	1.00	D						1
	1.20	PP	PP=1kg/cm2					
	1.40	PP	PP=1.5kg/cm2					
	1.50	D						
	2.00	D						2
	2.50	D						
				2.70	81.71		Firm grey with slight orange staining slightly gravelly sandy CLAY. Sand is fine to coarse gravel is fine to medium sub rounded. LAMBETH GROUP	
	3.00	D		3.00	81.41		End of Pit at 3.00m	3
								4
								5

Depth Strike	Water Strikes (None to (m)g)	Remarks
		Stability Sides stable



Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP301 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471519.61 - 176986.07 Level: 77.23		Date 16/07/2021	
Location: Reading						Dimensions (m): 1.70 Depth 3.00 0.50		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.25	76.98		Turf over brown sandy gravelly SILT with frequent rootlets. Gravel is fine to medium. Sand is fine to medium. TOPSOIL	
	0.80	PP	PP=1.25kg/cm2				Firm orangish brown sandy gravelly CLAY. Sand is fine to coarse gravel is fine to medium subangular to subrounded see photo 0.7-1.3m bgl BLACK PARK GRAVEL MEMBER	1
	1.10	PP	PP=2kg/cm2	1.30	75.93		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	2
	2.50	B		3.00	74.23		End of Pit at 3.00m	3
								4
								5

Depth Strike Water Strikes	 Rose to (img)	Remarks Stability Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP302 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471556.23 - 176955.42 Level: 79.68		Date 16/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.10		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	79.38		Turf over brown sandy gravelly SILT with frequent rootlets. Gravel is fine to medium subrounded. Sand is fine to medium. TOPSOIL	
				1.00	78.68		Soft to firm orangish brown slightly sandy CLAY BLACK PARK GRAVEL MEMBER	1
	1.30	PP	PP=1kg/cm2					
	1.50	PP	PP=1.5kg/cm2					
				2.00	77.68		Medium dense orange brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse subangular to rounded with a low to medium cobble content. BLACK PARK GRAVEL MEMBER	2
	3.00	PP	PP=3.5kg/cm2					
	3.00	PP	PP=3kg/cm2	3.10	76.58		Firm to stiff greenish grey and reddish brown mottled CLAY grading along the pit to orangish brown and green mottled sandy gravelly CLAY. Gravel is fine to coarse rounded to subrounded and occasional flint of cobble size LAMBETH GROUP	3
							End of Pit at 3.10m	
								4
								5

Depth Strike Rosen to (mkg)	Remarks Stability	Relative density assessed from DP301 Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP303 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471569.56 - 176927.93 Level: 80.20		Date 16/07/2021	
Location: Reading						Dimensions (m): 1.80 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.20		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	79.90		Turf covered brown sandy gravelly SILT with frequent rootlets. Gravel is fine to medium subrounded. Sand is fine to coarse. TOPSOIL	
	0.40	PP	PP=2kg/cm2	0.50	79.70		Firm bluish grey mottled brown gravelly CLAY. Gravel is fine to coarse rounded to subrounded BLACK PARK GRAVEL MEMBER	
							Orangish brown clayey fine to coarse SAND and fine to coarse GRAVEL with a low cobble content. BLACK PARK GRAVEL MEMBER	1
	1.20	PP	PP=2.15kg/cm2	1.17	79.03		Firm to stiff bluish grey and brown thinly laminated sandy silty CLAY LAMBETH GROUP	
				2.00	78.20		Soft greenish grey sandy gravelly CLAY. Gravel is fine to coarse angular to subangular. Low cobble content. LAMBETH GROUP	2
				2.40	77.80		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	3
	2.60	B		3.20	77.00		End of Pit at 3.20m	4
								5

		Remarks Stability Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP304 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471591.21 - 176902.89 Level: 80.74		Date 16/07/2021	
Location: Reading						Dimensions (m): 1.80 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.00		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.35	80.39		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium gravel is fine to medium subrounded to rounded. TOPSOIL	
							Very loose orangish brown clayey gravelly fine to coarse SAND with frequent rootless. Gravel is fine to medium subangular to subrounded. BLACK PARK GRAVEL MEMBER	1
	1.40	PP	PP=2kg/cm2	1.40	79.34		Stiff bluish grey mottled red with a high cobble content. Cobbles are very well rounded. LAMBETH GROUP	
	1.80	PP	PP=2kg/cm2					2
				2.40	78.34		Loose yellowish brown and black speckled clayey fine to medium SAND. LAMBETH GROUP	
	2.80	PP	PP=2kg/cm2	2.80	77.94		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	3
				3.00	77.74		End of Pit at 3.00m	
								4
								5

Depth Strike Water Strikes Rosen to (m/gg)	Remarks Stability	Relative density assessed from DP304 Sides stable
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 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP305 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471572.64 - 176889.29 Level: 80.36		Date 16/07/2021	
Location: Reading						Dimensions (m): 1.80 		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.10		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	1.50	PP	PP=1.25kg/cm2	0.30	80.06		Turf over sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subangular to subrounded. TOPSOIL		
				1.00	79.36		Firm orangish brown sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium angular to subrounded. BLACK PARK GRAVEL MEMBER		
				1.80	78.56		Firm bluish grey mottled brown and red sandy gravelly CLAY with a high cobble content. Cobbles are rounded. Sand is medium. Sand is in pockets. Gravel is fine medium subangular. LAMBETH GROUP		
				2.00	78.06		Firm bluish grey and dark brown mottled sandy gravelly CLAY with a low cobble content. Cobbles are rounded. Sand is medium. Sand is in pockets. Gravel is fine medium subangular. LAMBETH GROUP		
				2.30	77.86		Loose to medium dense yellowish brown and black speckled clayey fine to medium SAND. LAMBETH GROUP		
				2.50	77.56		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc		
				2.80	77.26		SEAFORD CHALK FORMATION		
				3.10			End of Pit at 3.10m		
Depth Strike: Rose to (mdeg)		Remarks: Relative density assessed from DP304							
		Stability: Sides stable							

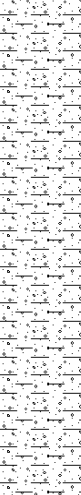
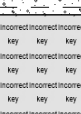


		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP306 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471553.44 - 176885.64 Level: 79.81			Date 16/07/2021	
Location: Reading				Dimensions (m): 1.80 0.50			Scale 1:25	
Client: Vistry Thames Valley				Depth 3.00			Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	79.41		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium subrounded to rounded. TOPSOIL	
	0.50	PP	PP=1.5kg/cm2				Firm orangish brown mottled reddish brown sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded. Coarse gravel is subrounded fine gravel is angular to subrounded. Low to medium cobble content. Cobbles are rounded. BLACK PARK GRAVEL MEMBER	
	1.00	PP	PP=1.5kg/cm2	0.90	78.91		Firm to stiff bluish grey mottled orangish brown sandy gravelly CLAY with frequent rootlets. Gravel is fine to coarse. Sand is fine to coarse in pockets. Low cobble content and rare boulders. LAMBETH GROUP	1
	1.50	PP	PP=2kg/cm2				Loose yellowish brown clayey fine to medium SAND. LAMBETH GROUP	2
				2.00	77.81		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	
				2.20	77.61			
				3.00	76.81		End of Pit at 3.00m	3
								4
								5

Depth Strike 	Water Strikes 	Remarks	Relative density assessed from DP303
		Stability	Sides stable

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP307 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471576.98 - 176859.59 Level: 80.32		Date 16/07/2021
Location: Reading				Dimensions (m): 1.80 Depth 3.00		Scale 1:25
Client: Vistry Thames Valley				Logged TM		

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼				0.20	80.12		Turf over sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subangular to subrounded. TOPSOIL
	0.50	PP	PP=1.25kg/cm2				Firm orangish brown sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium angular to subrounded. BLACK PARK GRAVEL MEMBER
	1.50	PP	PP=1.75kg/cm2				Firm bluish grey mottled brown and red sandy gravelly CLAY with a high cobble content. Cobbles are rounded. Sand is medium. Sand is in pockets. Gravel is fine medium subangular. LAMBETH GROUP
	2.30	PP	PP=2.5kg/cm2				Firm bluish grey mottled brown and red sandy gravelly CLAY with a high cobble content. Cobbles are rounded. Sand is medium. Sand is in pockets. Gravel is fine medium subangular. LAMBETH GROUP
				2.45	77.87		Loose to medium dense yellowish brown and black speckled clayey fine to medium SAND. LAMBETH GROUP
				2.80	77.52		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling and light brown staining on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION
				3.00	77.32		End of Pit at 3.00m

Depth Strike: 2.40 Rose to (mbgl): 2.40		Remarks: Relative density assessed from DP306 & DP307 Stability: Sides stable

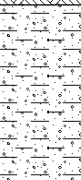
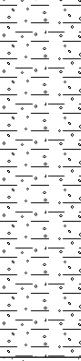


Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP308 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471657.89 - 176780.42 Level: 81.48		Date 20/07/2021	
Location: Reading						Dimensions (m): 1.80		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.20		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	81.18		Grass over brown sandy gravelly SILT with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded. TOPSOIL	
	1.30	PP	PP=1.5kg/cm2	1.40	80.08		Firm brown and grey mottled sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded. BLACK PARK GRAVEL MEMBER	1
	2.00	PP	PP=2.25kg/cm2				Firm to stiff bluish grey mottled brown slightly sandy gravelly CLAY with a low cobble content. Sand is fine to medium. Gravel is fine to coarse subangular to subrounded. Cobbles are rounded. LAMBETH GROUP	2
	2.70	PP	PP=3.5kg/cm2	2.60	78.88		Very stiff bluish grey slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular. LAMBETH GROUP	3
	2.80	PP	PP=3.25kg/cm2					
	2.90	PP	PP=4kg/cm2					
	3.00	PP	PP=4kg/cm2	3.20	78.28			
	End of Pit at 3.20m							4
								5

Depth Strike Remarks	Approx 20m from mature tree Stability
Water Strikes Rises to (megl)	Sides stable

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log		TrialPit No TP309 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471537.45 - 176722.15 Level: 81.76	
Location: Reading		Dimensions (m): 1.80 0.50		Scale 1:25	
Client: Vistry Thames Valley		Depth 3.35		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
▼				0.30	81.46		1
				0.90	80.86		
				1.60	80.16		
	1.90	PP	PP=3kg/cm2				2
	2.70	PP	PP=3.75kg/cm2				
	2.90	PP	PP=2.25kg/cm2	2.80	78.96		
							3
				3.35	78.41		4
							5

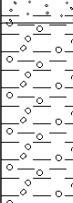
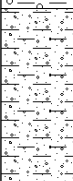
Depth Strike: 1.57 Water Strikes: 1.57		Remarks: Relative density assessed from DP309
		Stability: Sides unstable below water table



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP310 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471507.23 - 176713.17 Level: 81.36		Date 20/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 0.35		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.35	81.01		Turf over brown sandy gravelly SILT with frequent rootlets. Gravel is fine to medium subrounded to rounded. TOPSOIL		
							End of Pit at 0.35m		
									1
									2
									3
									4
									5
Water Strikes Depth Strike Rows to (m)		Remarks Terminated due to live services x 2 one at each end of pit (water)							
		Stability Sides stable							



 Geo-Environmental		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			TrialPit No TP311 Sheet 1 of 1		
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471522.28 - 176686.15 Level: 80.97		Date 20/07/2021	
Location: Reading						Dimensions (m): 1.80 Depth 3.10		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	80.67		Grass over brown sandy gravelly SILT with frequent rootlets and roots up to 20mm. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded. TOPSOIL	
	1.00	PP	PP=2.25kg/cm2				Firm to stiff brown slightly mottled grey slightly gravelly CLAY with frequent rootlets and roots up to 5mm. Gravel is fine to medium subangular. BLACK PARK GRAVEL MEMBER	1
	1.50	PP	PP=2.5kg/cm2	1.48	79.49		Firm to stiff brown slightly mottled grey slightly gravelly CLAY with frequent rootlets and roots up to 5mm and a low cobble content. Gravel is fine to coarse angular to subrounded. Cobbles are rounded. BLACK PARK GRAVEL MEMBER	2
	2.40	PP	PP=1.6kg/cm2	2.10	78.87		Firm to stiff brown slightly mottled grey sandy gravelly CLAY with frequent rootlets and roots up to 5mm. Sand is fine to coarse. Gravel is fine to medium angular to subangular. BLACK PARK GRAVEL MEMBER	
				2.70	78.27		Occasional to frequent iron staining within CLAY. Firm bluish grey mottled reddish brown sandy CLAY with frequent rootlets and roots 10mm. Sand is fine. LAMBETH GROUP	3
	3.00	PP	PP=1.6kg/cm2	3.10	77.87		End of Pit at 3.10m	4
								5

Depth Strike 	Water Strikes 	Remarks Stability Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP312 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471493.13 - 176743.82 Level: 81.61		Date 20/07/2021	
Location: Reading						Dimensions (m): 1.80 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.35		Logged TM	

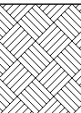
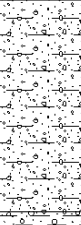
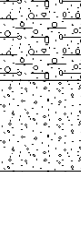
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	81.21		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subangular to rounded. TOPSOIL	1
							Loose becoming medium dense to dense yellow to orangish brown clayey gravelly fine to coarse SAND with pockets of fine to medium SAND. Gravel is fine to coarse angular to subrounded. BLACK PARK GRAVEL MEMBER	
	1.50	PP	PP=1.6kg/cm2	1.40	80.21		Firm to stiff bluish grey turning darker with depth slightly gravelly CLAY with occasional rootlets and roots up to 5mm. Gravel is fine to medium subangular to subrounded. LAMBETH GROUP	2
	1.80	PP	PP=2kg/cm2					
	2.50	PP	PP=2.25kg/cm2					
				2.90	78.71		Firm bluish dark grey slightly gravelly sandy 1 to 3mm laminated CLAY with occasional rootlets and roots up to 5mm. Sand is fine to medium. Gravel is fine to medium subangular to subrounded. LAMBETH GROUP	3
				3.00	78.61		Medium dense yellowish to light brown with dark orange staining slightly clayey fine to coarse SAND. LAMBETH GROUP	
				3.35	78.26		End of Pit at 3.35m	4
								5

Depth Strike Rose to (mdeg) 1.40 1.40	Remarks	Relative density assessed from DP310 & DP311
	Stability	Sides unstable below water table

Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP313 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471476.67 - 176768.61 Level: 81.36		Date 20/07/2021	
Location: Reading						Dimensions (m): 1.80		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.35		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.50	80.86		Turf over brown sandy gravelly SILT with frequent rootlets, roots up to 20mm and golf tees. TOPSOIL	
							Loose to medium dense brown clayey fine to coarse SAND and fine to coarse angular to subrounded GRAVEL. BLACK PARK GRAVEL MEMBER	1
	2.10	PP	PP=2kg/cm2	2.00	79.36		Firm to stiff bluish grey slightly sandy CLAY. Sand is fine. LAMBETH GROUP	2
	2.40	PP	PP=2.5kg/cm2	2.50	78.86		Medium dense grey and yellow fine to coarse SAND becoming clayey SAND. LAMBETH GROUP	
	3.00 3.00 3.10	PP PP PP	PP=1.5kg/cm2 PP=1.8kg/cm2 PP=1.75kg/cm2	3.10	78.26		Stiff greyish brown mottled reddish brown slightly sandy thinly laminated CLAY with black sandy inclusions. LAMBETH GROUP	3
				3.30	78.06		End of Pit at 3.35m	4
								5

Depth Strike Rosen to (m/kg)		Remarks Relative density assessed from DP312
		Stability Sides stable

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP314 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471515.07 - 176792.24 Level: 81.20		Date 20/07/2021	
Location: Reading						Dimensions (m): 1.80 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.15		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.37	80.83		Grass over brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subangular to subrounded.		
				1.10	80.10		Very loose to medium dense brown to orangish brown clayey fine to coarse SAND and fine to coarse angular to subrounded GRAVEL. BLACK PARK GRAVEL MEMBER		
				1.80	79.40		Orangish brown clayey gravelly fine to coarse SAND with a low to medium cobble content. Gravel us fine to coarse angular to subrounded rinded flint. Cobbles are rounded rinded flint. BLACK PARK GRAVEL MEMBER		
	2.00	PP	PP=2.25kg/cm2				Firm to stiff bluish grey mottled brown slightly sandy CLAY with a medium cobble. Sand is fine to medium in pockets. Cobbles are well rounded. LAMBETH GROUP		
	2.50	PP	PP=2.75kg/cm2						
	2.75	PP	PP=3kg/cm2						
			2.85	78.35		Medium dense yellow and orange slightly gravelly fine to medium SAND. Gravel is fine subangular. LAMBETH GROUP			
			3.15	78.05		End of Pit at 3.15m			
1.80 0.50 1.80 0.50									
Depth Strike		Water Strikes		Remarks: Spalling in the sand towards the pit base. Relative density assessed from DP328					
				Stability: Localised spalling					



Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP315 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471482.40 - 176813.61 Level: 80.53		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth 3.50 0.50		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.35	80.18		Turf over brown sandy gravelly SILT with frequent rootlets. Gravel is fine to medium subangular to subrounded. Sand is fine to medium. TOPSOIL <i>Corrugated plastic pipe</i>	
				1.40	79.13		Very loose to loose orangish brown slightly clayey fine to coarse SAND and fine to coarse angular to subangular GRAVEL. BLACK PARK GRAVEL MEMBER	1
	2.00	PP	PP=1.25kg/cm2				Stiff bluish grey mottled red and brown cobbly CLAY. Cobbles are rounded. LAMBETH GROUP	2
	2.50	PP	PP=2.75kg/cm2					
				2.90	77.63		Very loose to medium dense yellowish brown slightly clayey slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to angular. LAMBETH GROUP	3
	3.30	B		3.20	77.33		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	
				3.50	77.03		End of Pit at 3.50m	4
								5

Depth Strike Rosen to (m/kg)	Water Strikes 	Remarks Relative density assessed from DP326 & DP327. NOTE zero N values at depth in DP326.
Stability Sides stable		

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP316 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471455.50 - 176798.67 Level: 80.55		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.25		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.40	80.15		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subrounded to rounded. TOPSOIL		
							Loose becoming dense orangish brown slightly clayey fine to coarse SAND and fine to coarse angular to subrounded GRAVEL. BLACK PARK GRAVEL MEMBER		
	2.65	PP	PP=1.75kg/cm2	2.65	77.90		Stiff bluish grey slightly gravelly CLAY. Gravel is fine subrounded. LAMBETH GROUP		
	3.00	PP	PP=2.25kg/cm2	3.25	77.30		End of Pit at 3.25m		
Depth Strike Water Strikes		Remarks Relative density assessed from DP313							
Stability Sides stable									



Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP317 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471418.58 - 176848.12 Level: 78.77		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.20		Logged TM	

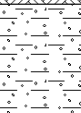
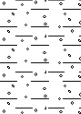
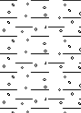
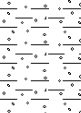
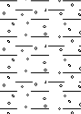
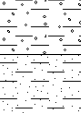
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.35	78.42		Turf over brown sandy gravelly SILT with frequent rootlets and roots up to 3mm. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded. TOPSOIL	
	1.50	PP	PP=2kg/cm2				Firm to stiff orangish brown sandy CLAY with occasional to frequent roots and rootlets. Sand is fine to medium becoming more prominent with depth. BLACK PARK GRAVEL MEMBER	1
	2.00	PP	PP=1.75kg/cm2					2
				3.20	75.57			3
							End of Pit at 3.20m	4
								5

Depth Strike Water Strikes	 Rises to (megl)	Remarks Stability Sides stable
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Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP318 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471413.13 - 176867.85 Level: 78.39		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth 3.20 0.50		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	78.09		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium subrounded to rounded. TOPSOIL	
	0.80	PP	PP=2kg/cm2				Firm to stiff sandy CLAY with rare angular fine to medium gravel. Sand is fine to coarse. Gravel is fine to medium subangular. BLACK PARK GRAVEL MEMBER	1
	1.20	PP	PP=2kg/cm2					
	2.40	PP	PP=2kg/cm2					2
	2.60	PP	PP=2.25kg/cm2					
	2.80	PP	PP=2.5kg/cm2					3
				3.20	75.19		End of Pit at 3.20m	4
								5

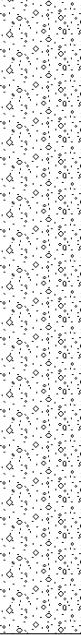
Depth Strike Remarks	Water Strikes Notes to (mngt)	Stability Sides stable
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 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP319 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471382.73 - 176893.00 Level: 78.49		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 Depth 3.25		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.40	78.08		Turf over brown sandy gravelly SILT with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium subrounded to rounded. TOPSOIL		
	0.60	PP	PP=1.75kg/cm2				Stiff brown slightly gravelly CLAY. Gravel is fine rounded to subrounded. LAMBETH GROUP		
	0.80	PP	PP=2kg/cm2						
	1.20	PP	PP=2kg/cm2						
	2.00	PP	PP=2kg/cm2						
	2.50	PP	PP=1.6kg/cm2	2.50	75.98		Firm yellowish brown sandy CLAY. Sand is fine. LAMBETH GROUP		
				3.25	75.24		End of Pit at 3.25m		
1 2 3 4 5									
		Remarks Stability Sides stable							

Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP320 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471398.09 - 176908.81 Level: 78.40		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.20		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	Scale
	Depth	Type	Results					
				0.40	78.00		Turf over sandy gravelly SILT with frequent rootlets and roots upto10mm. Gravel is fine to medium subrounded to rounded. Sand is fine to coarse. TOPSOIL	1 2 3 4 5
				1.90	76.50		Firm to stiff orangish brown sandy gravelly CLAY with frequent rootlets and a low cobble content. Gravel is fine to coarse angular to subangular rinded flint. Cobbles are angular rinded flint. BLACK PARK GRAVEL MEMBER	
				2.95	75.45		Medium dense becoming loose yellowish to orangish brown slightly clayey gravelly fine to medium SAND with a very low cobble content. Gravel is fine to coarse angular to subrounded rinded flint. Cobbles are subangular to subrounded rinded flint. BLACK PARK GRAVEL MEMBER	
				3.20	75.20		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION End of Pit at 3.20m	

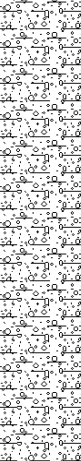
		Remarks Localised spalling in the sand. Relative density assessed from DP317
		Stability Localised spalling

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log			Trial Pit No TP321 Sheet 1 of 1		
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471339.23 - 176927.80 Level: 79.79		Date 19/07/2021	
Location: Reading				Dimensions (m): 2.00 		Scale 1:25	
Client: Vistry Thames Valley				Depth 2.60		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50	79.29		Turf over brown sandy gravelly SILT with frequent rootlets and roots up to 4mm. Gravel is fine to medium subrounded to rounded. TOPSOIL
				2.60	77.19		Medium dense orangish brown gravelly fine to coarse SAND with a low cobble content. Gravel is fine to coarse subangular to rounded rinded flints. Cobbles are rounded rinded flint. BLACK PARK GRAVEL MEMBER
							End of Pit at 2.60m
1 2 3 4 5							
Depth Strike: 		Remarks: Unstable in sand below 0.5m Terminated at 2.6m bgl. Relative density assessed from DP319					
Water Strikes: 		Stability: Sides unstable					



Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP322 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471416.67 - 176957.52 Level: 79.14		Date 19/07/2021	
Location: Reading						Dimensions (m): 2.00 0.50		Scale 1:25	
Client: Vistry Thames Valley						Depth 3.30		Logged TM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.50	78.64		Grass over brown sandy gravelly SILT with frequent rootlets and roots 30mm. Sand is fine to medium. Gravel is fine to medium subrounded to rounded. TOPSOIL		
							Loose orangish brown slightly gravelly fine to coarse SAND with occasional roots 5mm. Gravel is medium subangular. Medium dense from 1.4m to 2.2m bgl. BLACK PARK GRAVEL MEMBER		
				2.40	76.74		Loose yellowish brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded. BLACK PARK GRAVEL MEMBER		
				2.90	76.24		Medium dense orangish brown slightly clayey fine to coarse SAND and fine to medium subangular to angular rinded flint GRAVEL. BLACK PARK GRAVEL MEMBER		
				3.30	75.83		End of Pit at 3.30m		
Depth Strike Water Strikes		Remarks Relative density assessed from DP323							
Stability Sides stable									

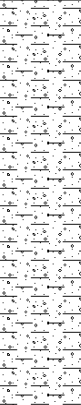
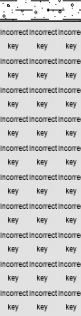
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Trial Pit Log				TrialPit No TP323 Sheet 1 of 1	
Project Name: Reading Golf Course				Project No. GE20079		Co-ords: 471478.11 - 176938.76 Level: 77.46		Date 19/07/2021	
Location: Reading						Dimensions (m): 1.90 Depth 3.12 0.50		Scale 1:25 Logged TM	
Client: Vistry Thames Valley									

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.40	77.06		Turf covered brown silty gravelly fine to medium SAND with frequent rootless. Gravel is fine to medium rounded to subrounded. TOPSOIL	
	1.40	PP	PP=2kg/cm2				Firm to stiff orangish brown sandy gravelly CLAY with frequent rootlets and medium cobble content. Gravel is fine to coarse angular to subangular rinded flint. Sand is fine to coarse. Cobbles are angular to subrounded rinded flints. LAMBETH GROUP	1
				2.00	75.46		Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc SEAFORD CHALK FORMATION	2
	2.50	B						
				3.10	74.36			3
							End of Pit at 3.12m	
								4
								5

Water Strikes Depth Strike Rises to (m/ft)		Remarks Stability Sides stable

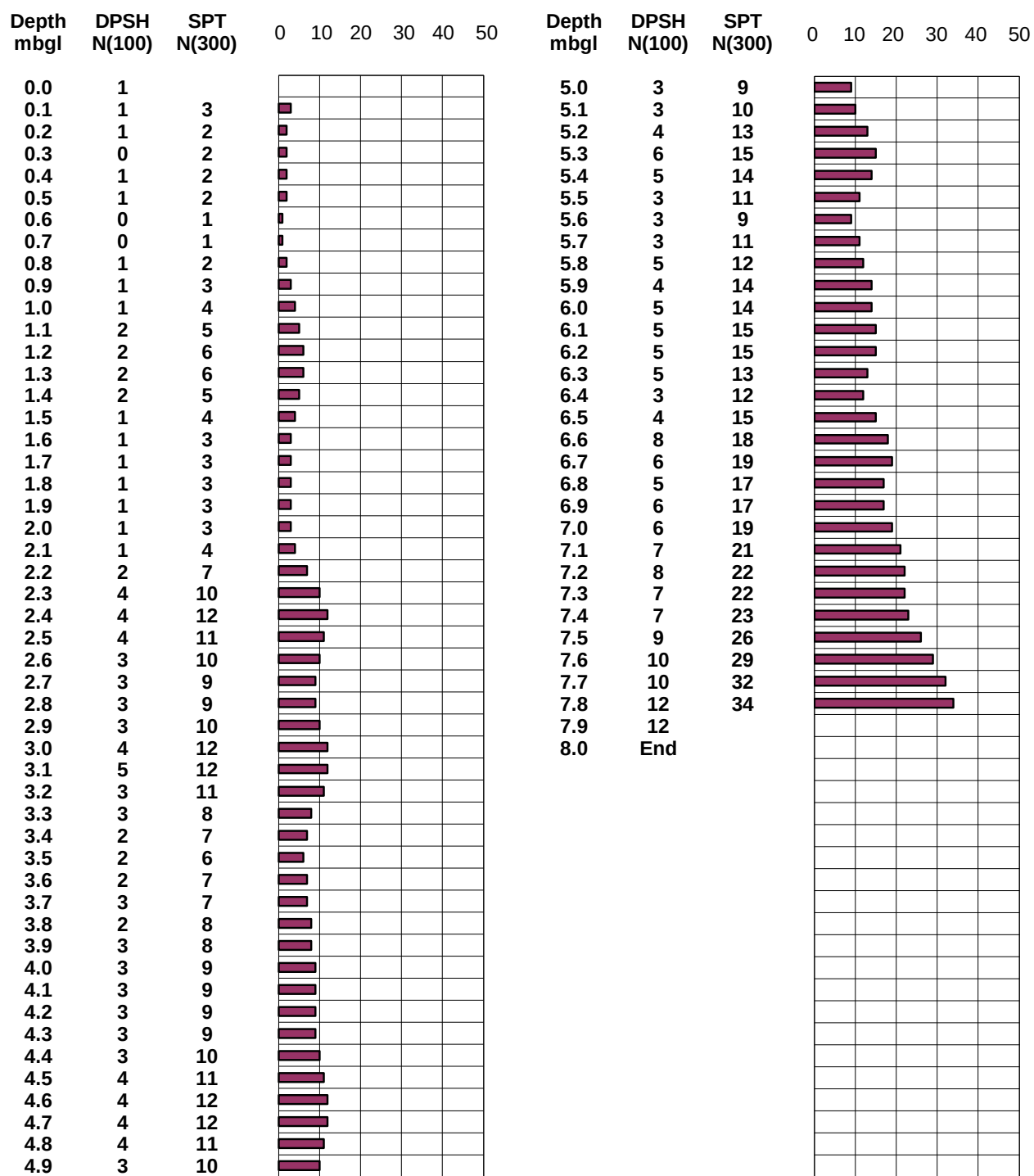


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Trial Pit Log		TrialPit No TP324 Sheet 1 of 1	
Project Name: Reading Golf Course		Project No. GE20079		Co-ords: 471481.61 - 176967.80 Level: 77.10	
Location: Reading		Dimensions (m): 2.20 		Scale 1:25	
Client: Vistry Thames Valley		Depth 3.10		Logged TM	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	2.60	B		0.30	76.80		Turf covered brown sandy gravelly SILT with frequent rootlets. Sand is fine to medium. Gravel is fine to medium rounded to subrounded. TOPSOIL	
								Firm brown sandy gravelly CLAY with occasional to frequent rootless. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded. LAMBETH GROUP
			1.70	75.40		Firm to stiff orangish brown sandy gravelly CLAY with occasional rootlets and a low rinded flint cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subangular rinded flint. LAMBETH GROUP		
			2.00	75.10		White to off white recovered as destructured black speckled black speckled Ciria grade Dc CHALK like coarse sand clasts. rinded flint is angular coarse gravel, cobbles and boulders. SEAFORD CHALK FORMATION		
						Structureless off-white and white CHALK composed of sand and gravel sized very weak to weak clasts with some silt size matrix and localised black speckling on clast faces. Occasional cobble size chalk clasts and some cobble sized flint. CIRIA Grade Dc		
			3.00	74.10		End of Pit at 3.10m		
			3.10	74.00				

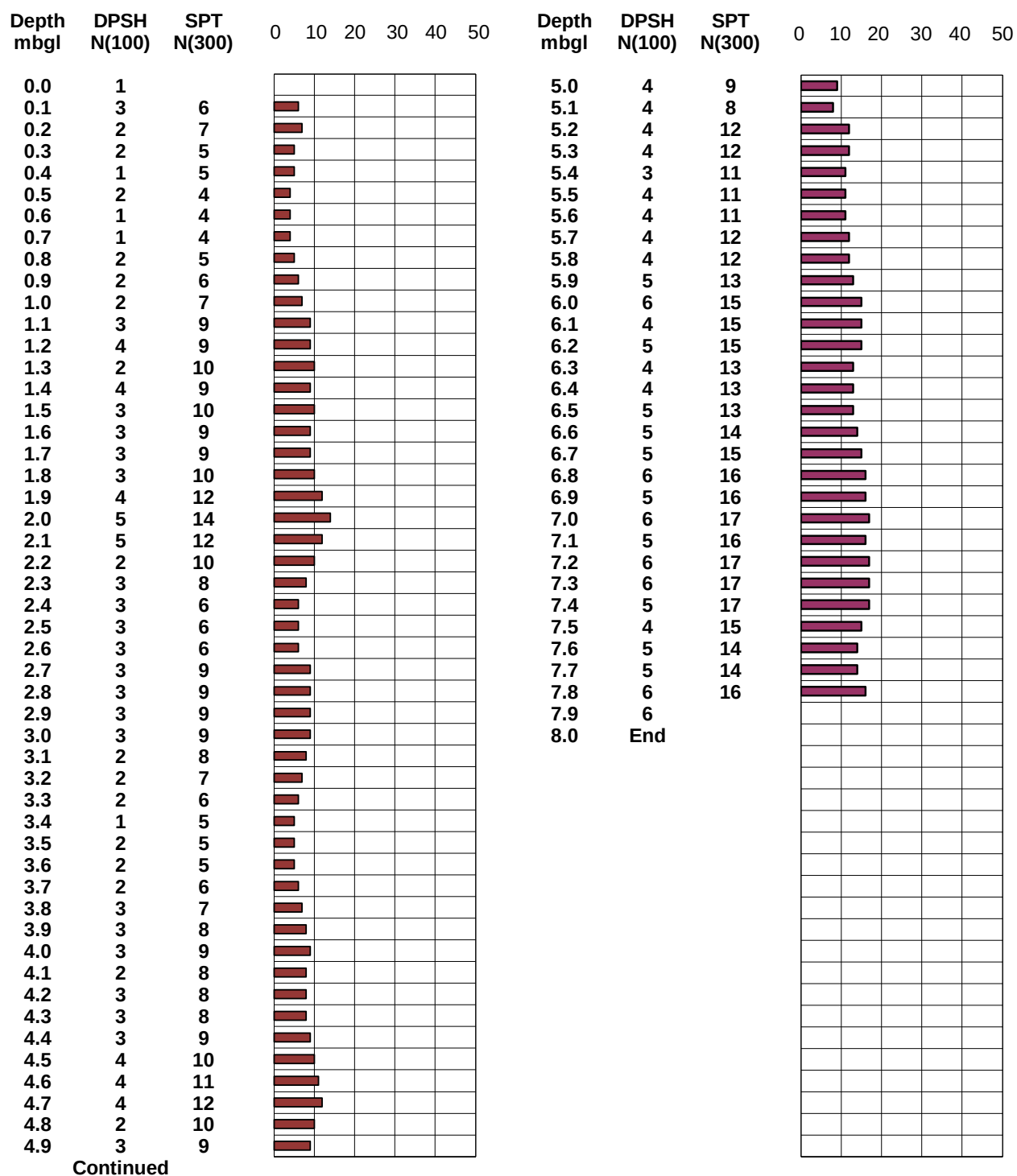
Depth Strike: Rose to (mbsg)		Remarks: *(Sample of chalk does not contain fist sized clumps)*	
Stability: Sides stable			





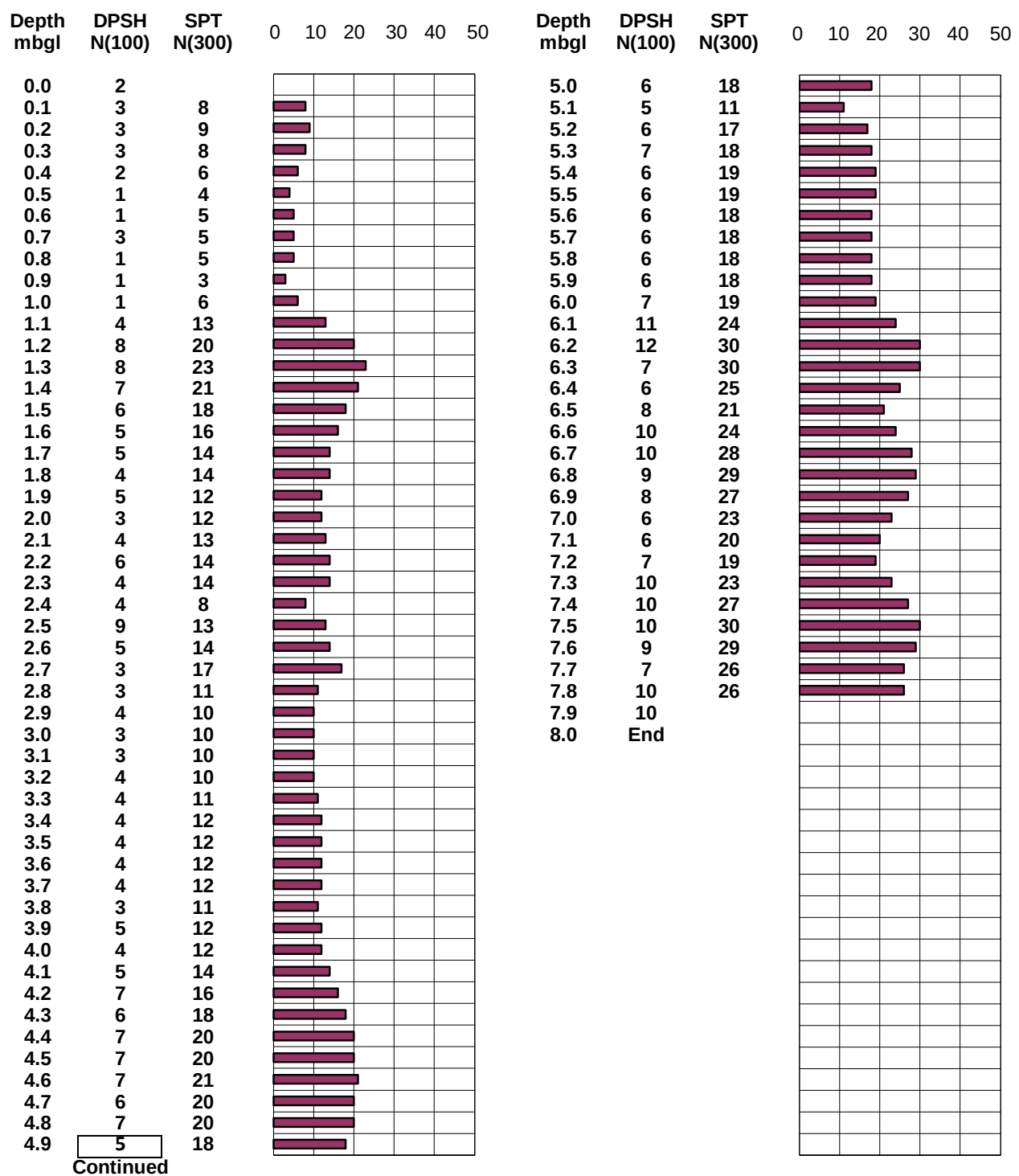
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP1		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



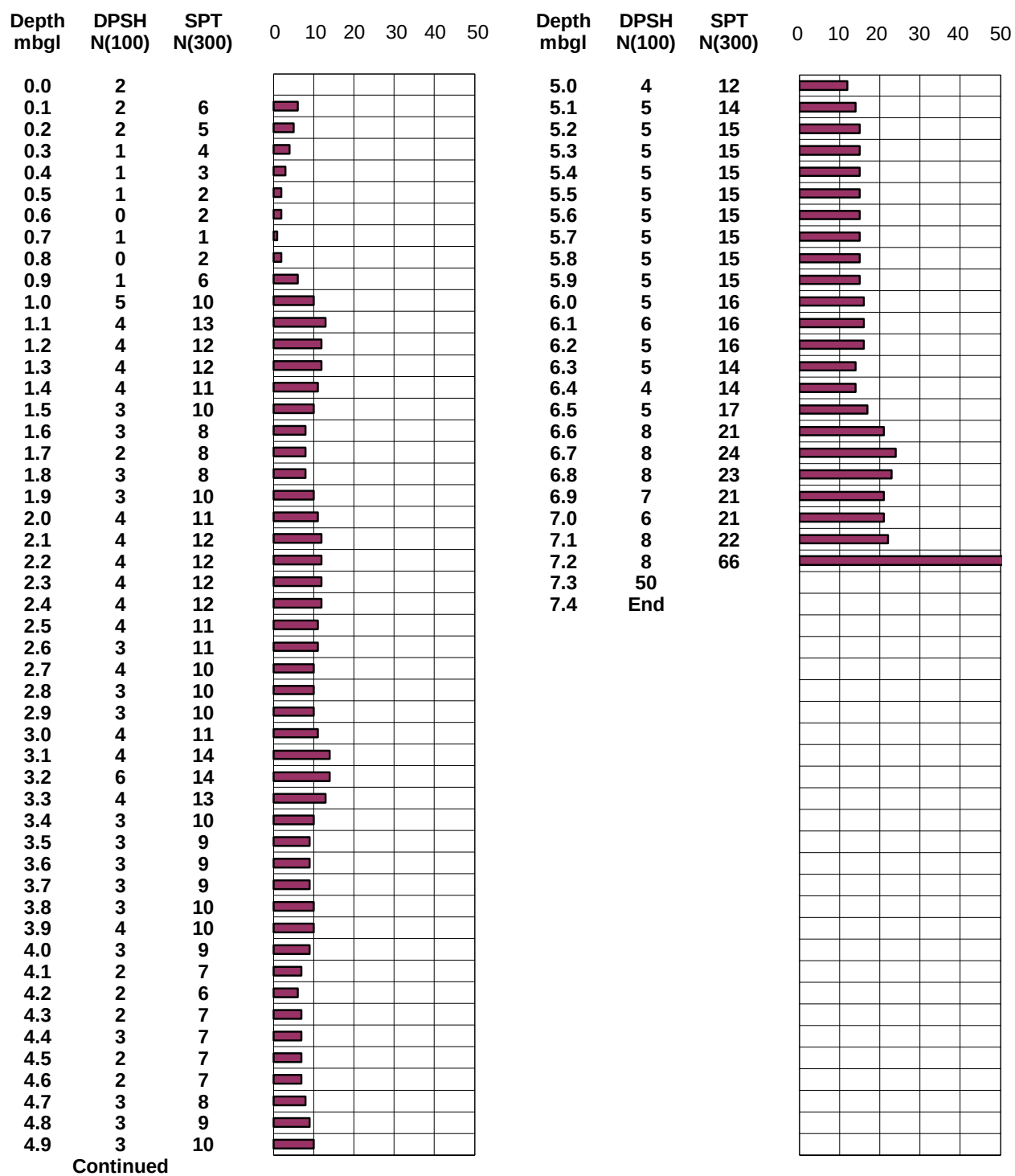
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP2		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
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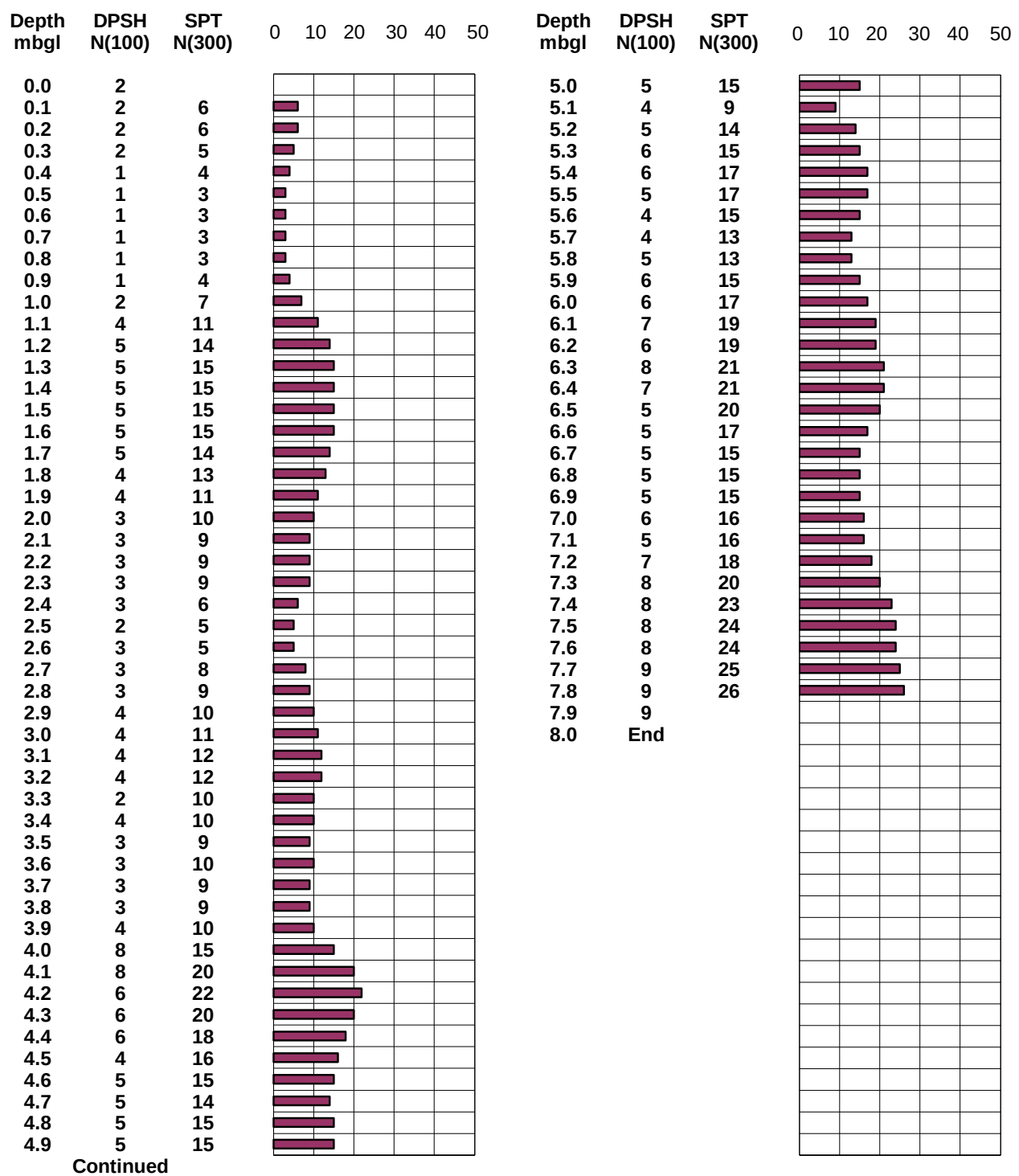
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP3
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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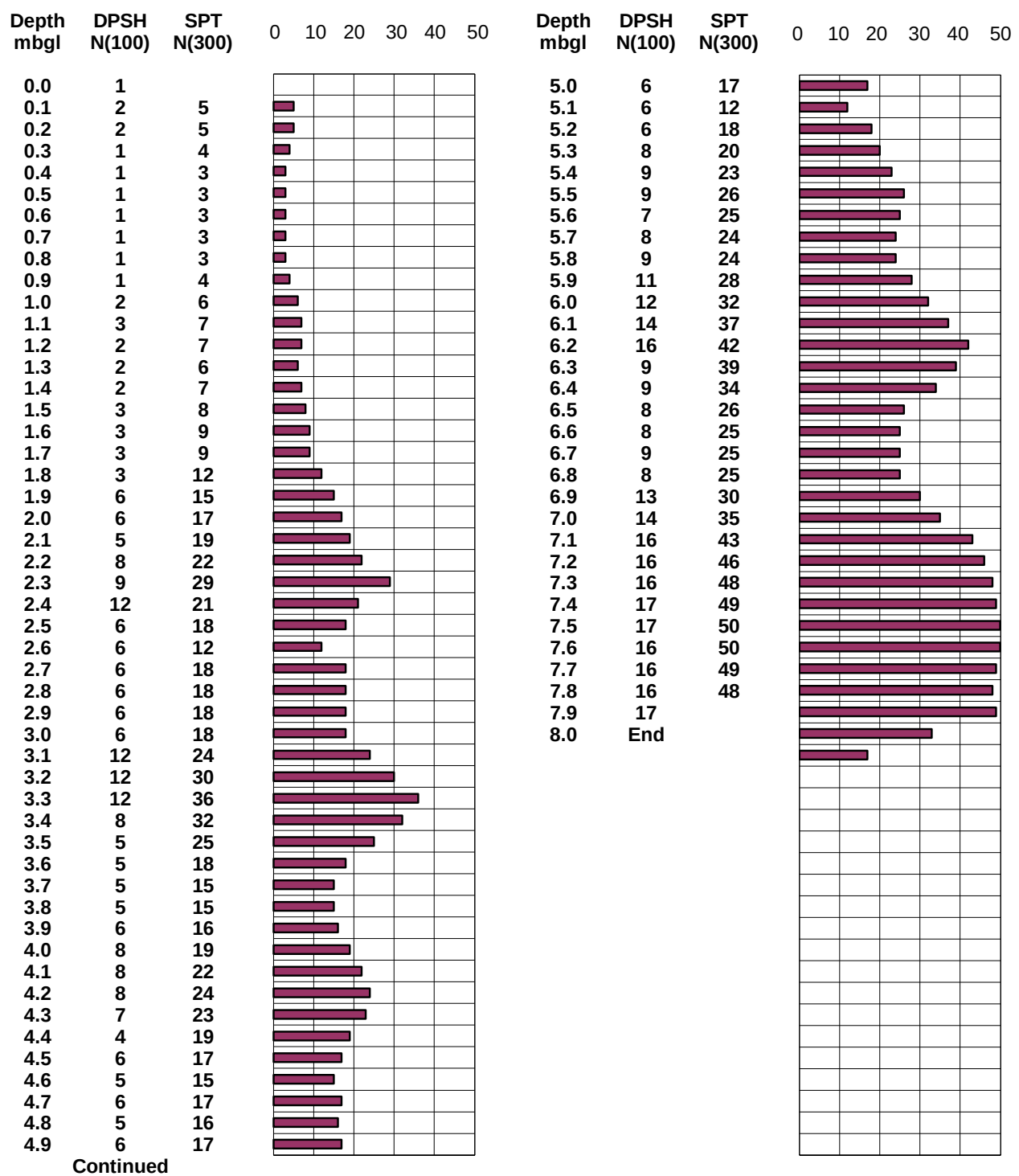
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP4
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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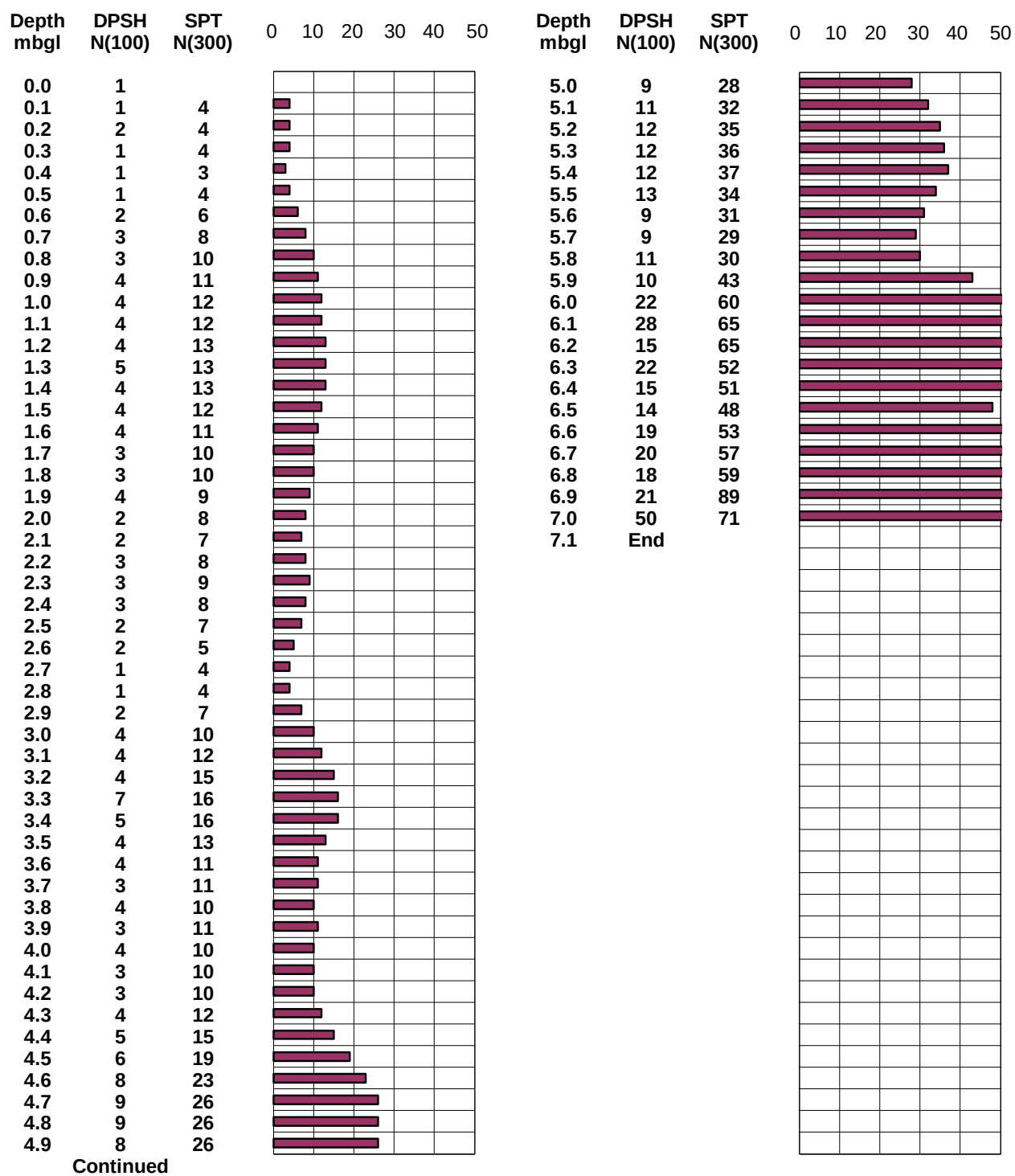
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP5
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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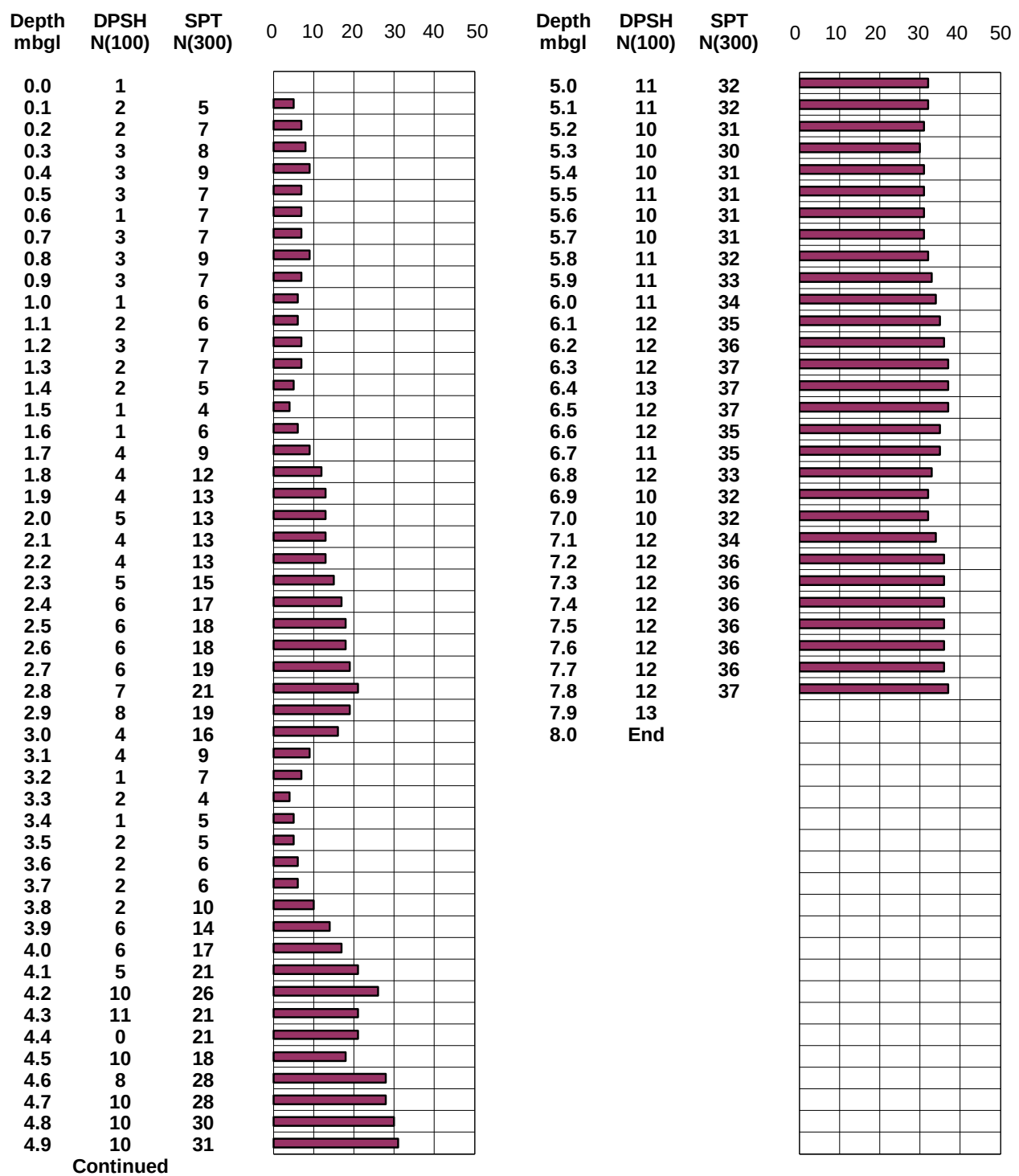
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP6
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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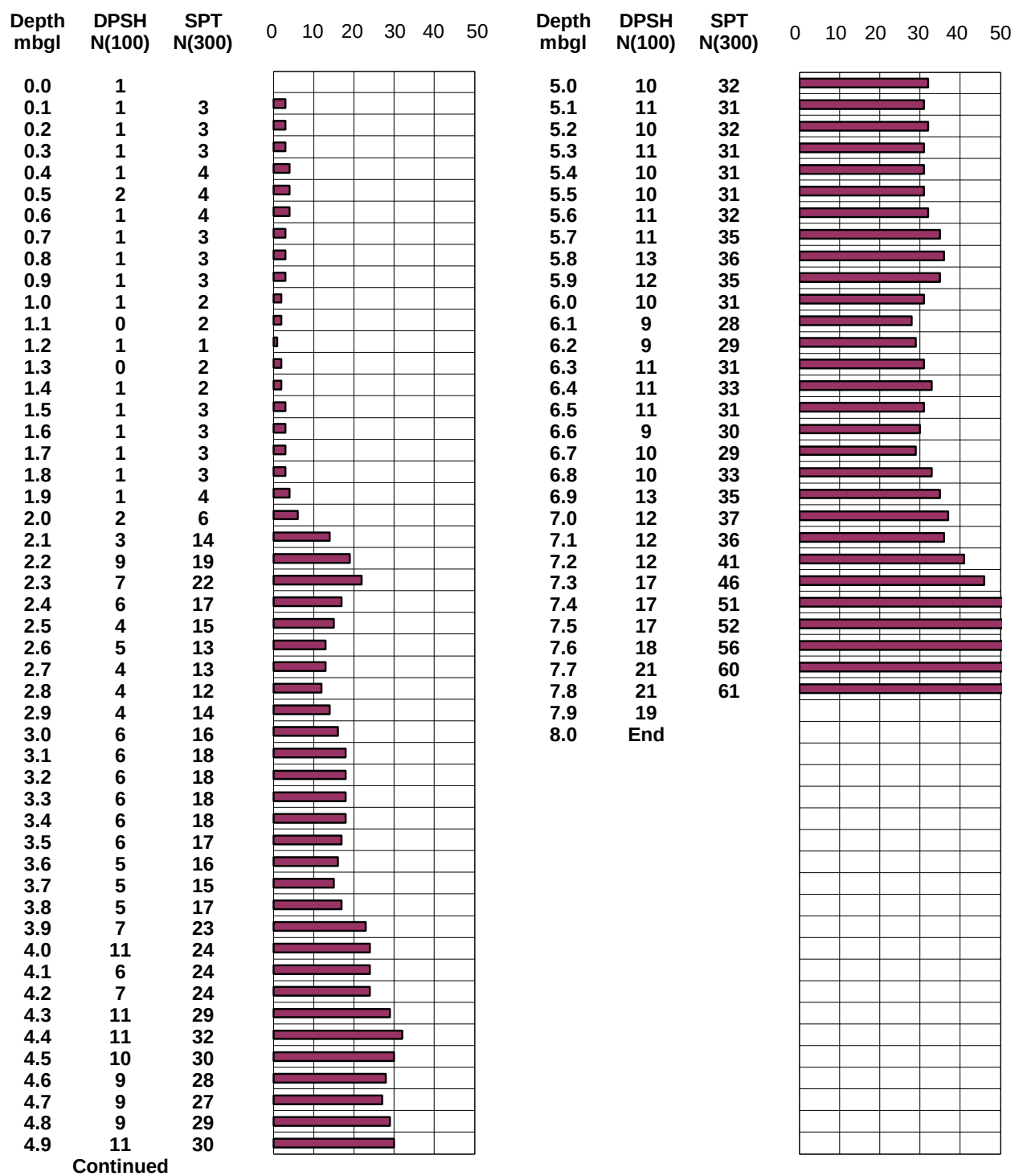
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP7
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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Figure:	-	Scale:	Not To Scale		



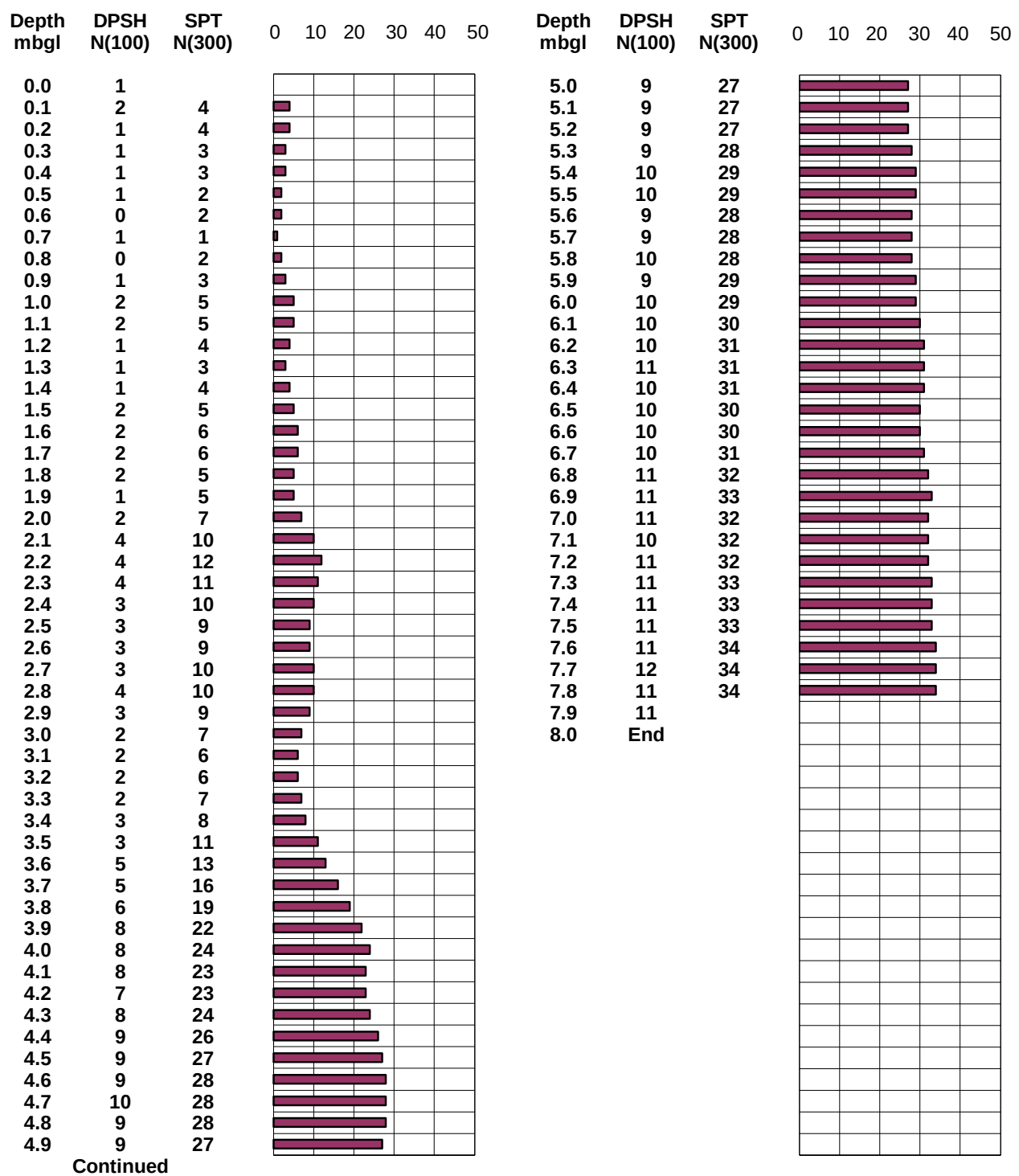
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP8
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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Figure:	-	Scale:	Not To Scale		



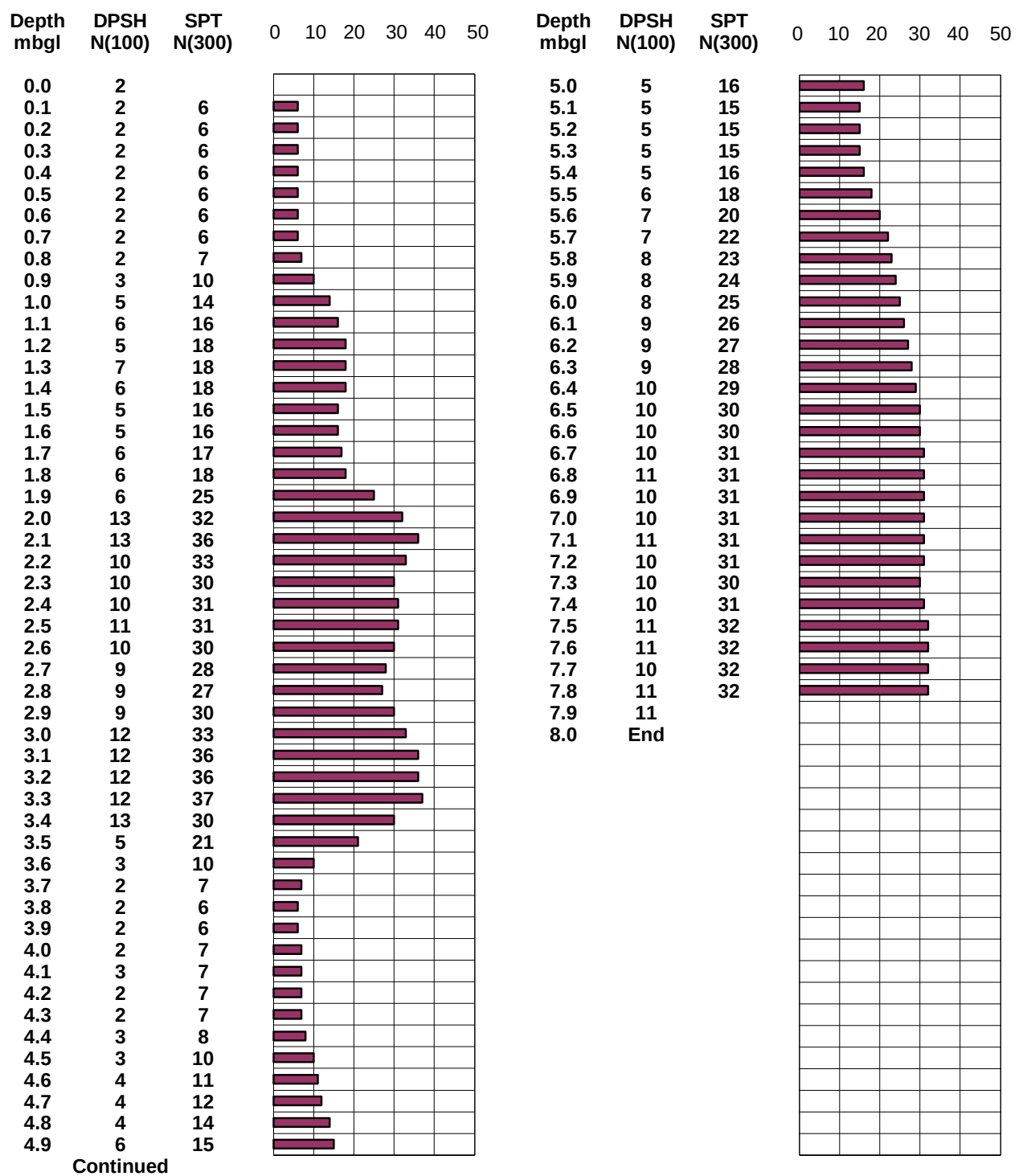
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP9
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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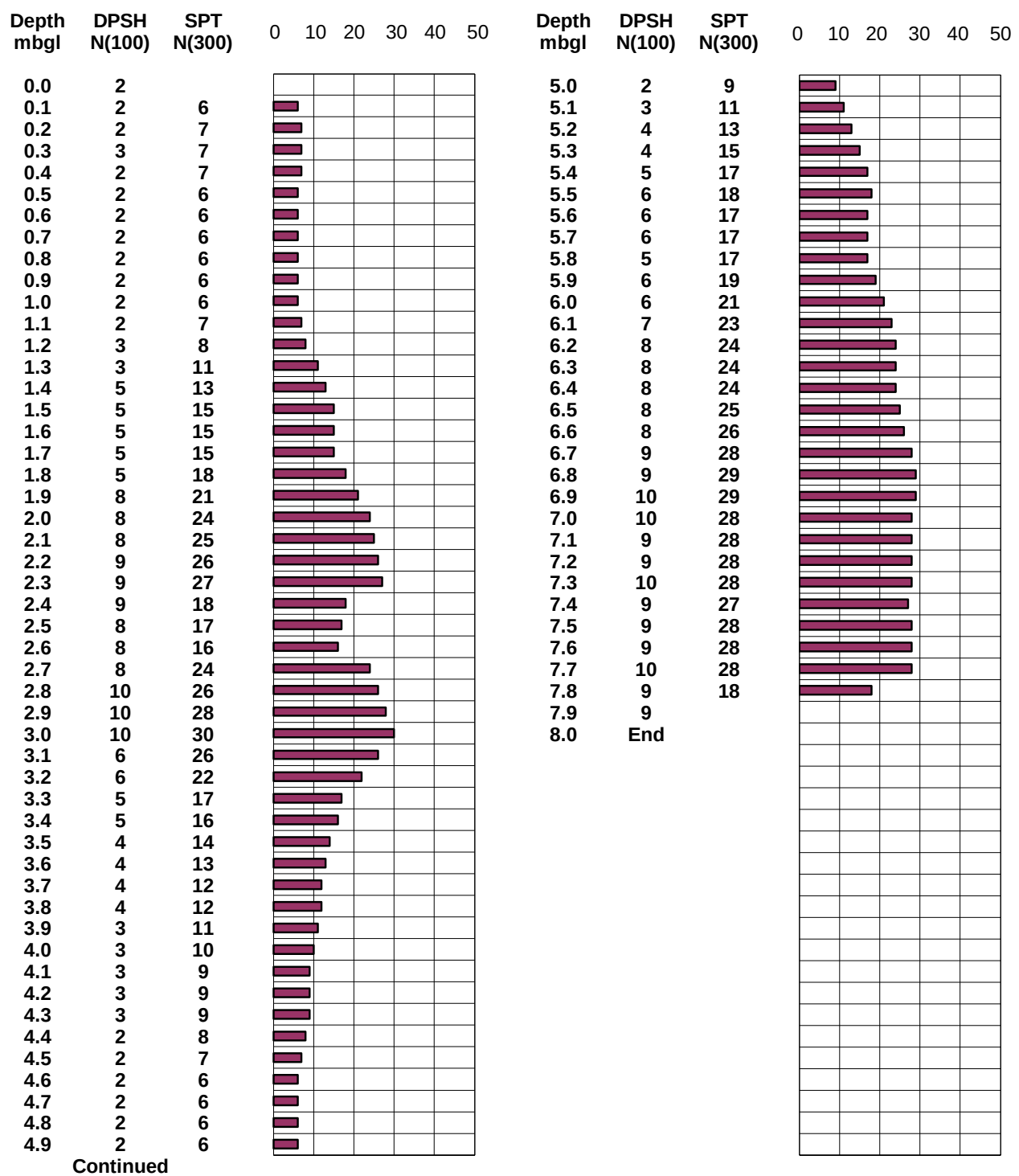
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP10
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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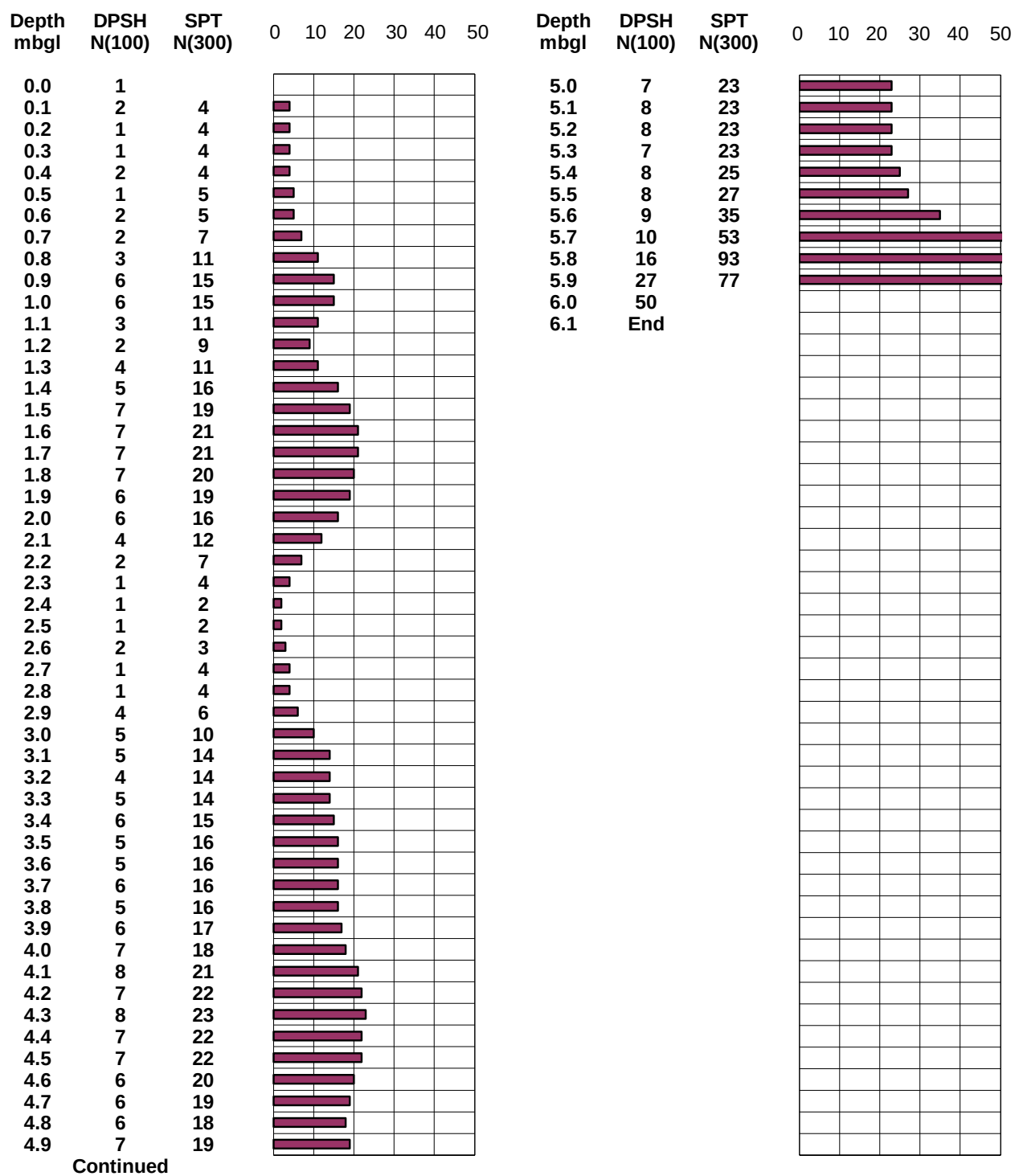
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP11
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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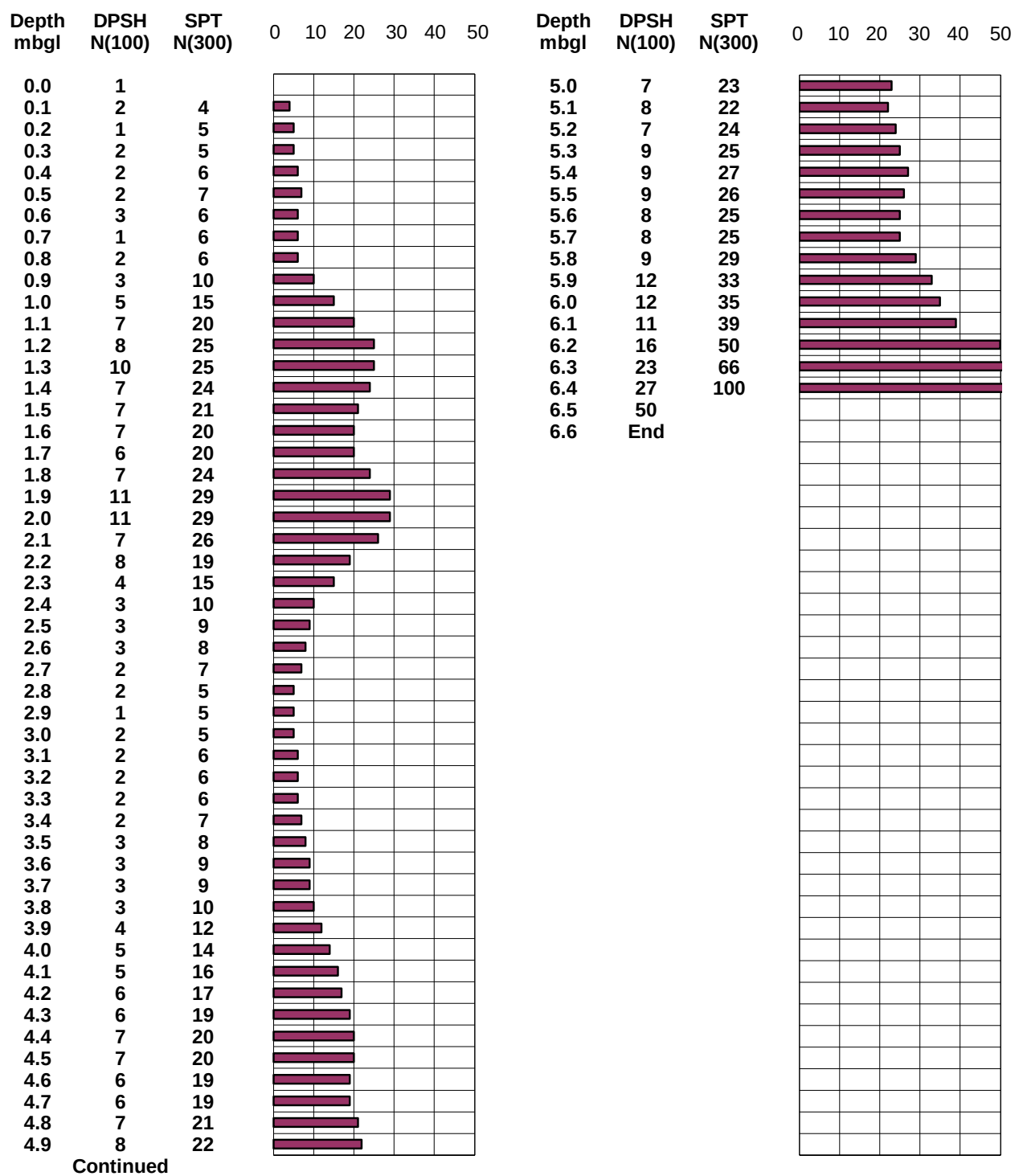
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP12
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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Figure:	-	Scale:	Not To Scale		



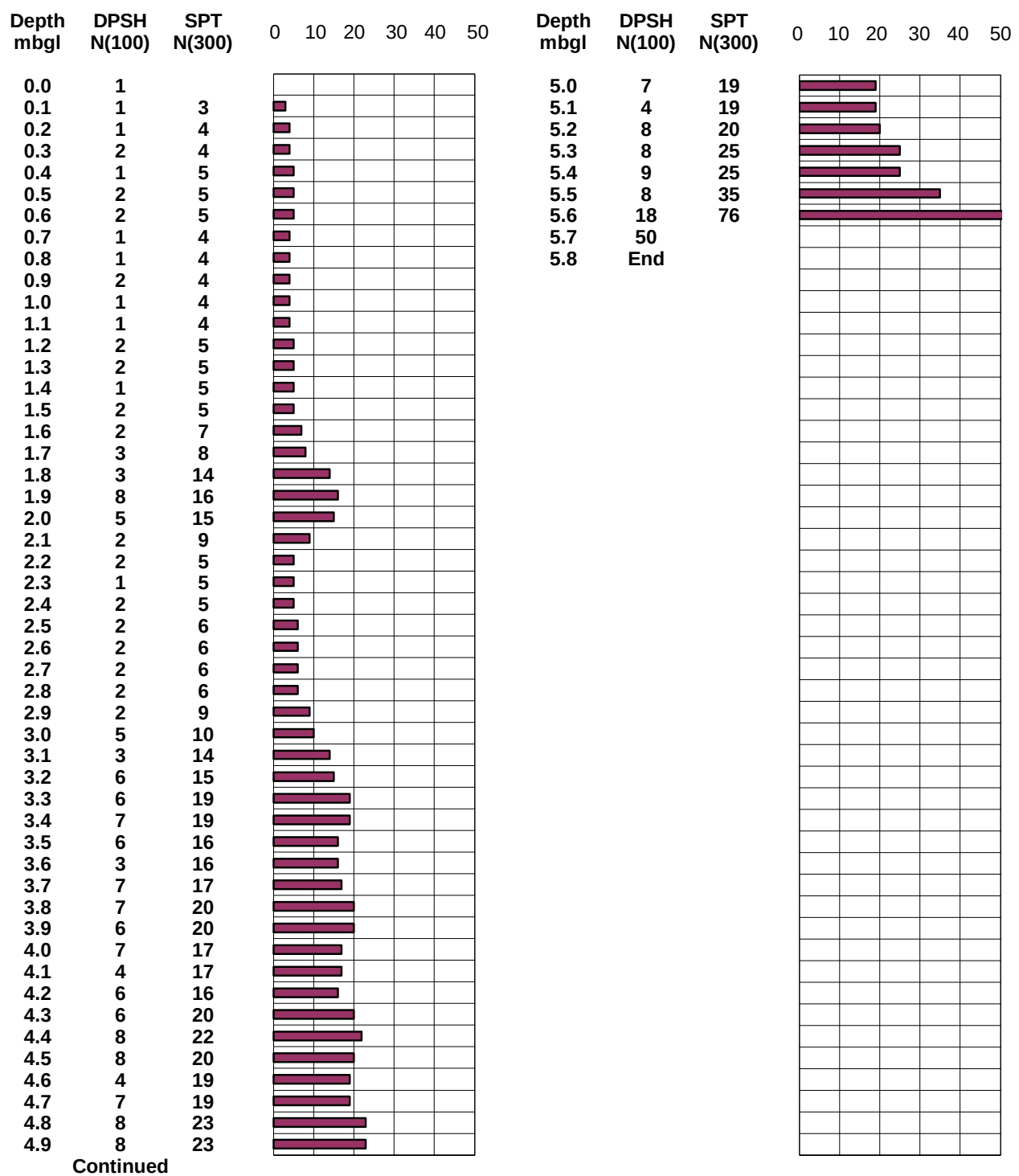
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP13
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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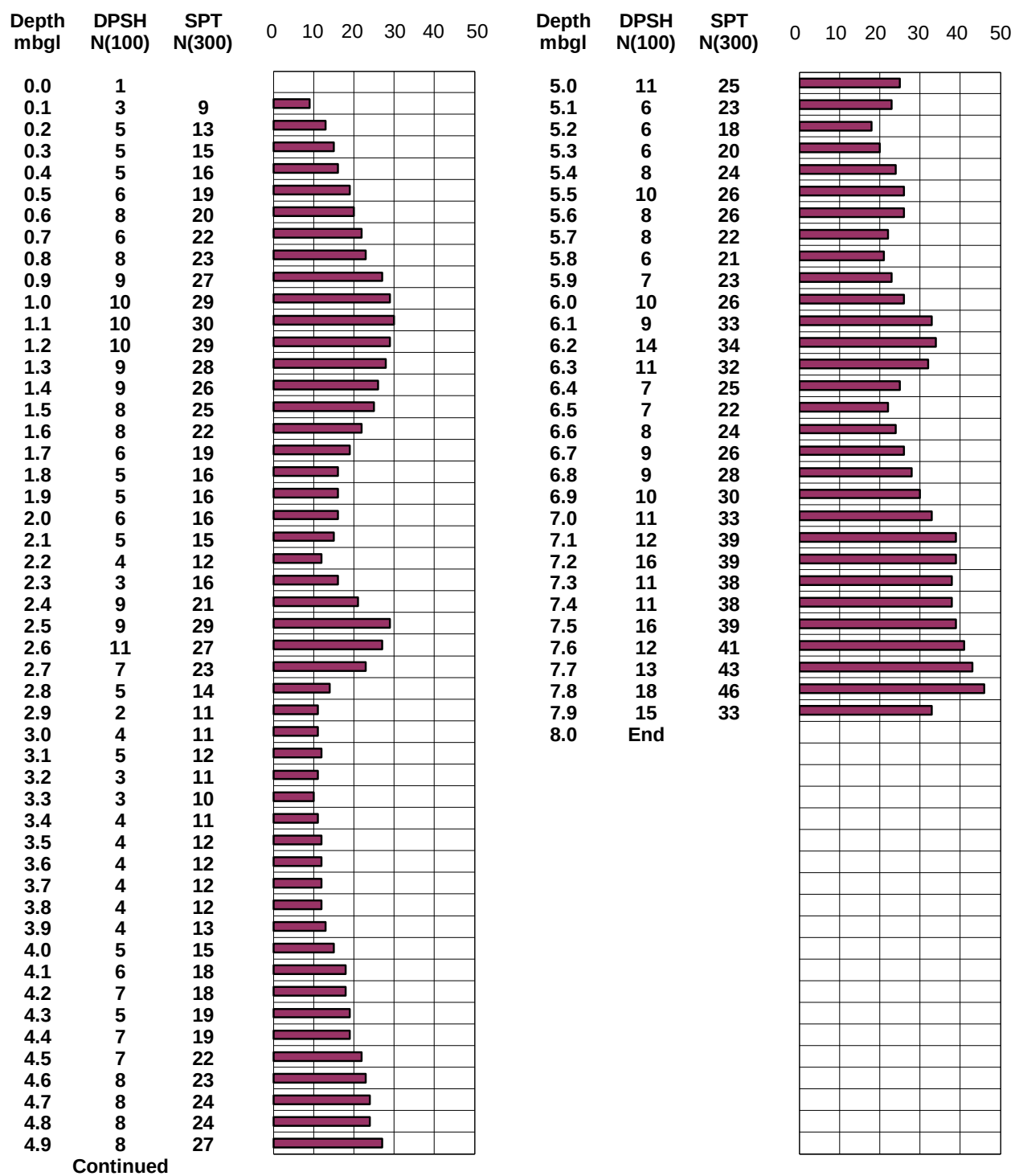
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP14
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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Figure:	-	Scale:	Not To Scale		



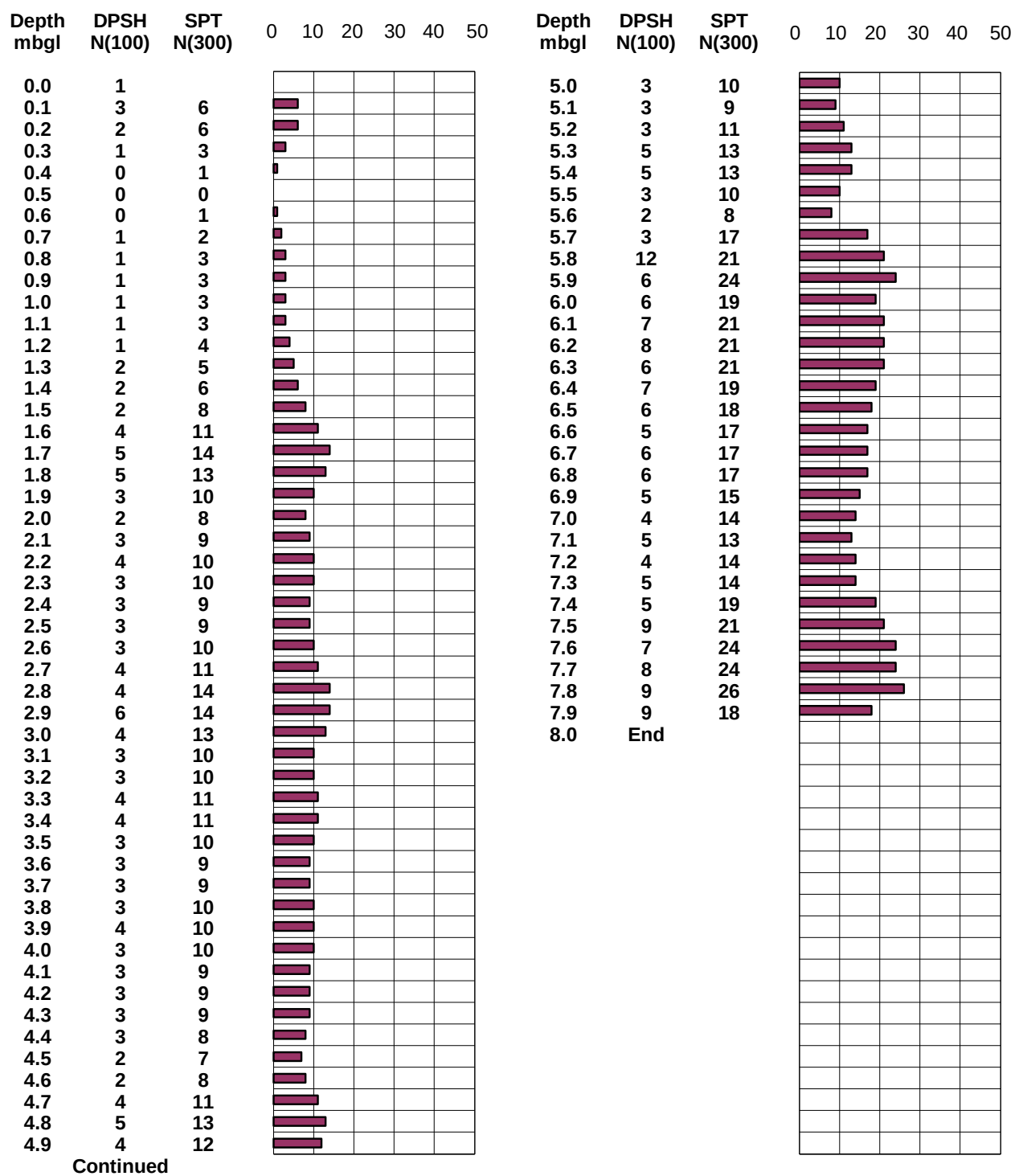
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP15
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



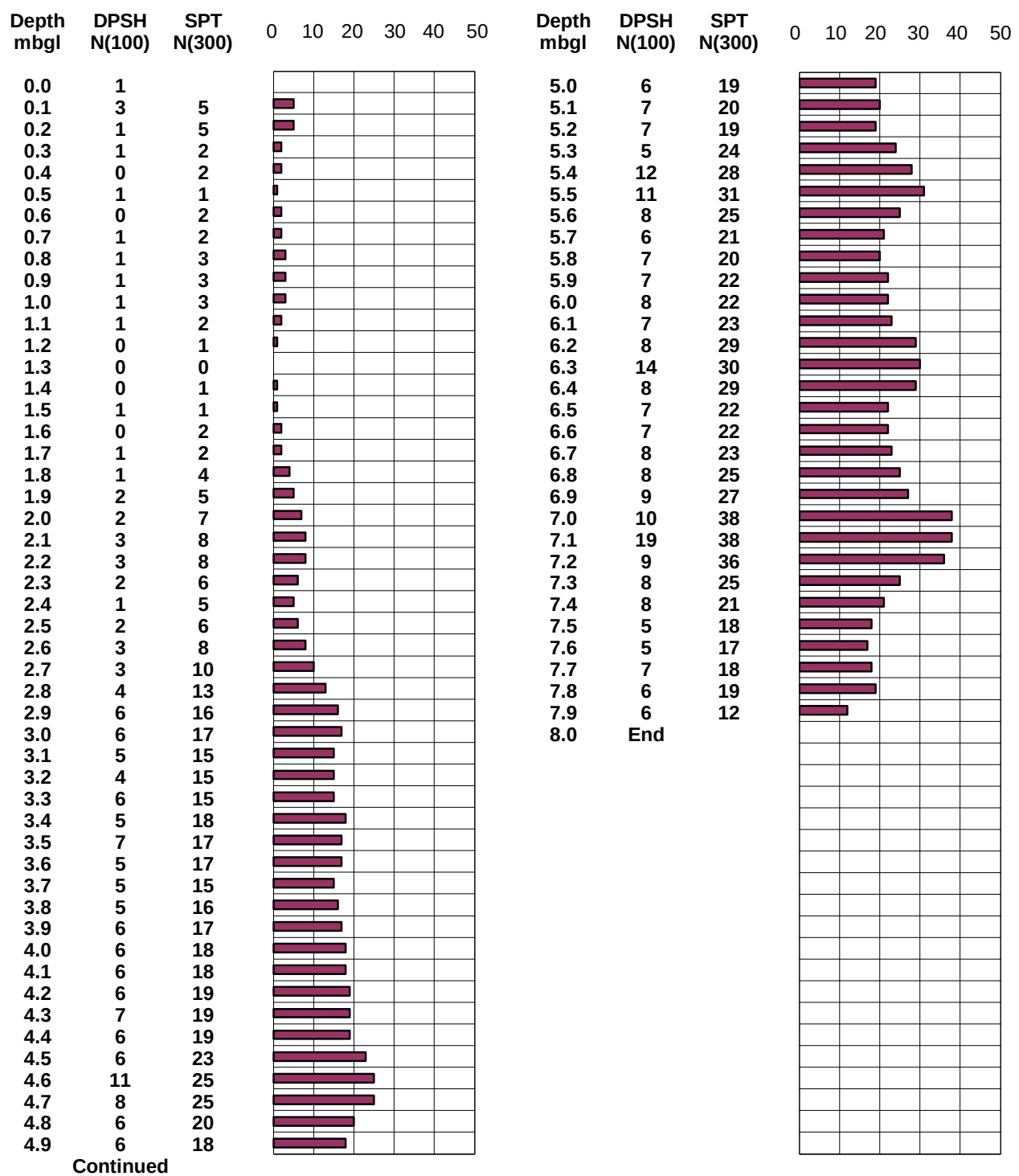
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP301		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
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Figure:	-	Scale:	Not To Scale				



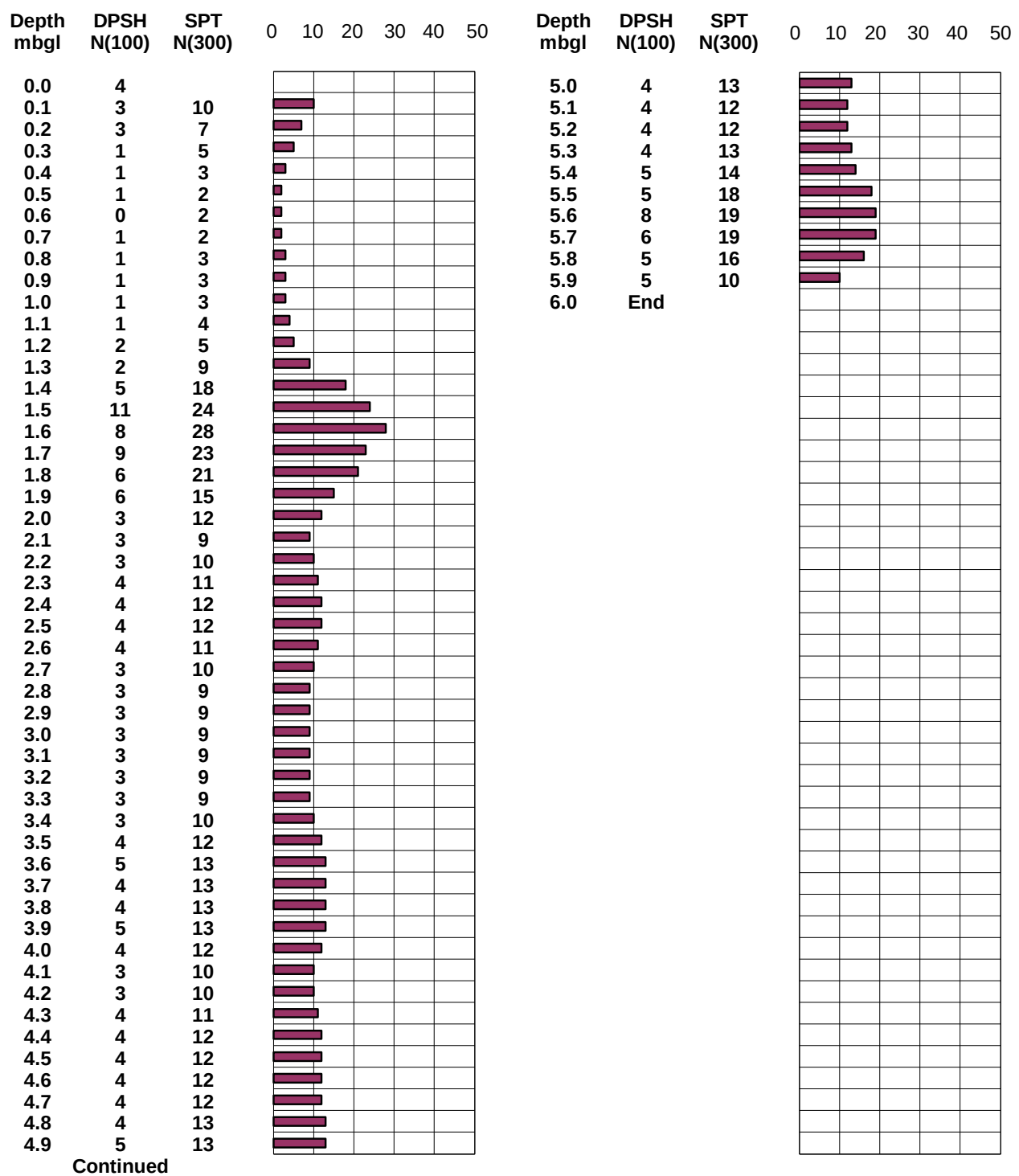
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP303
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



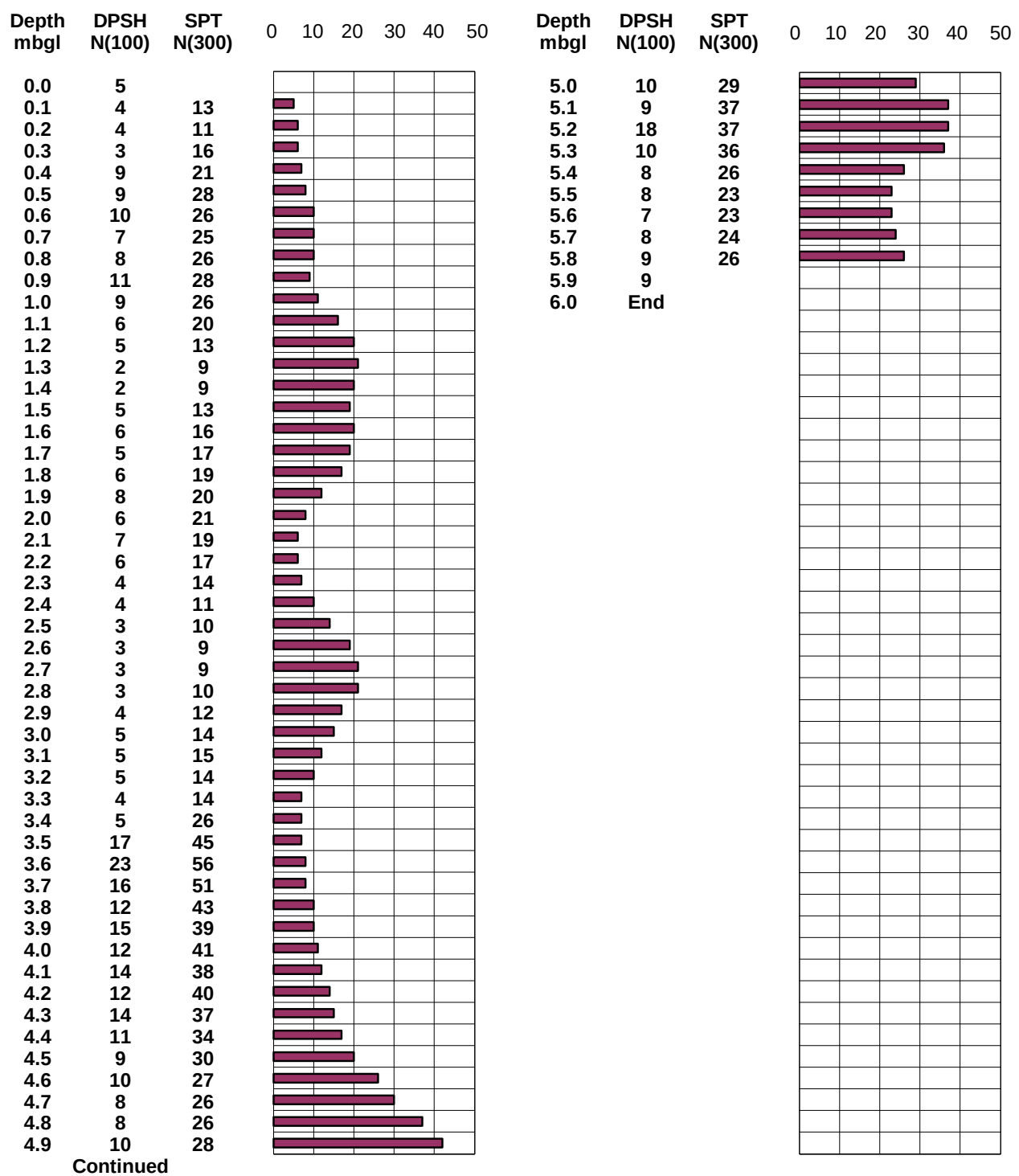
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP304
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



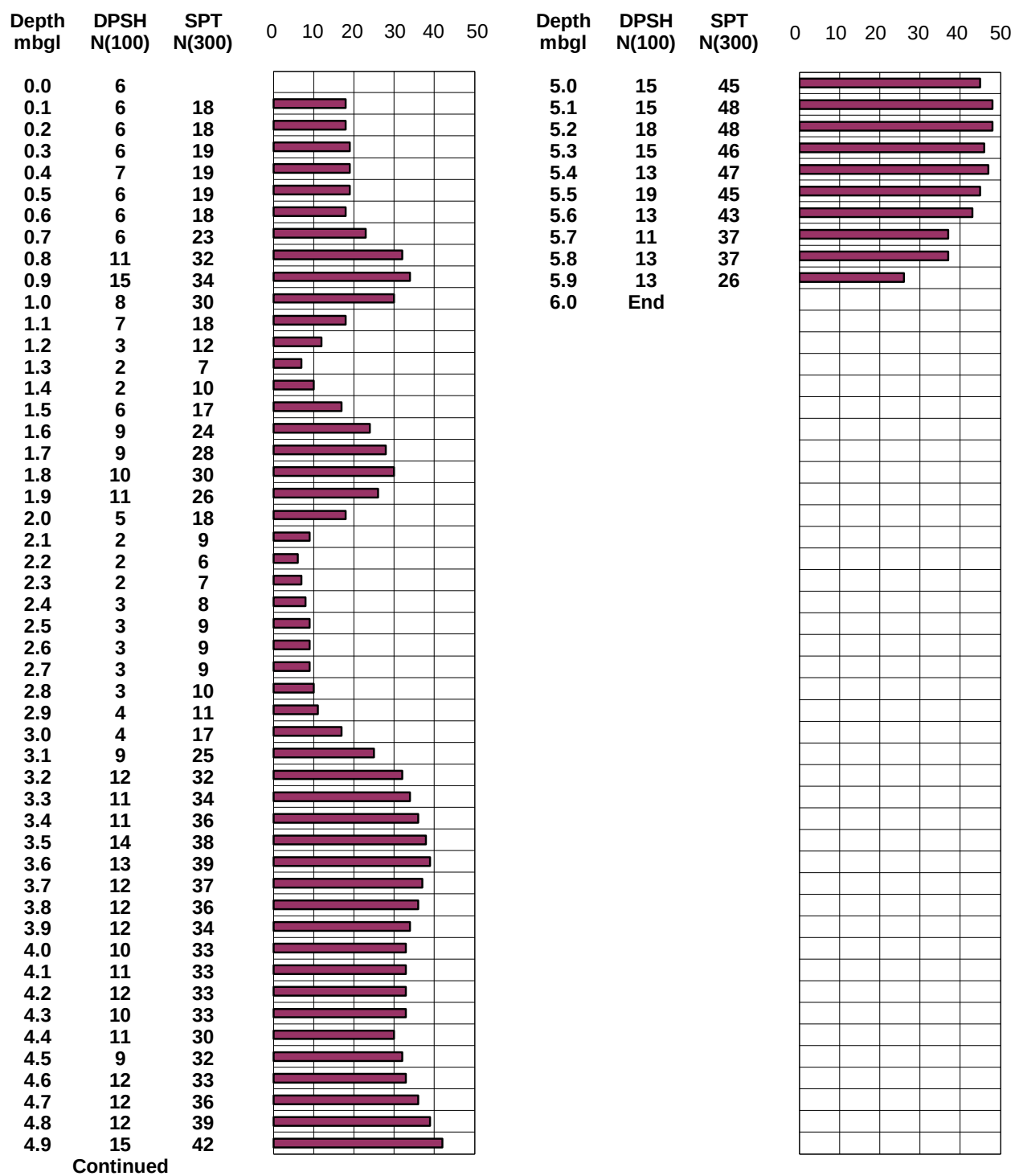
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP306
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



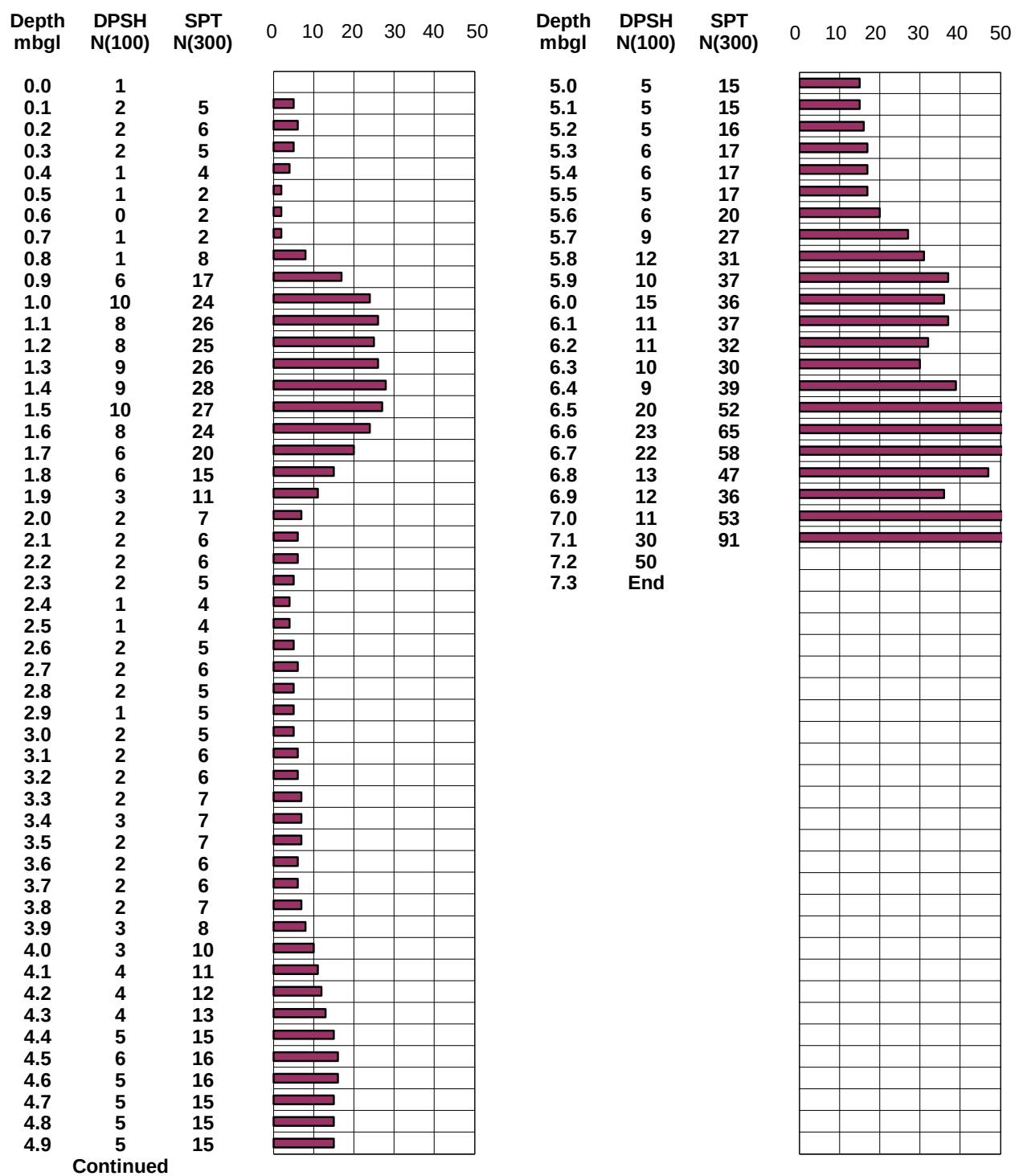
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP307
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
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Figure:	-	Scale:	Not To Scale		



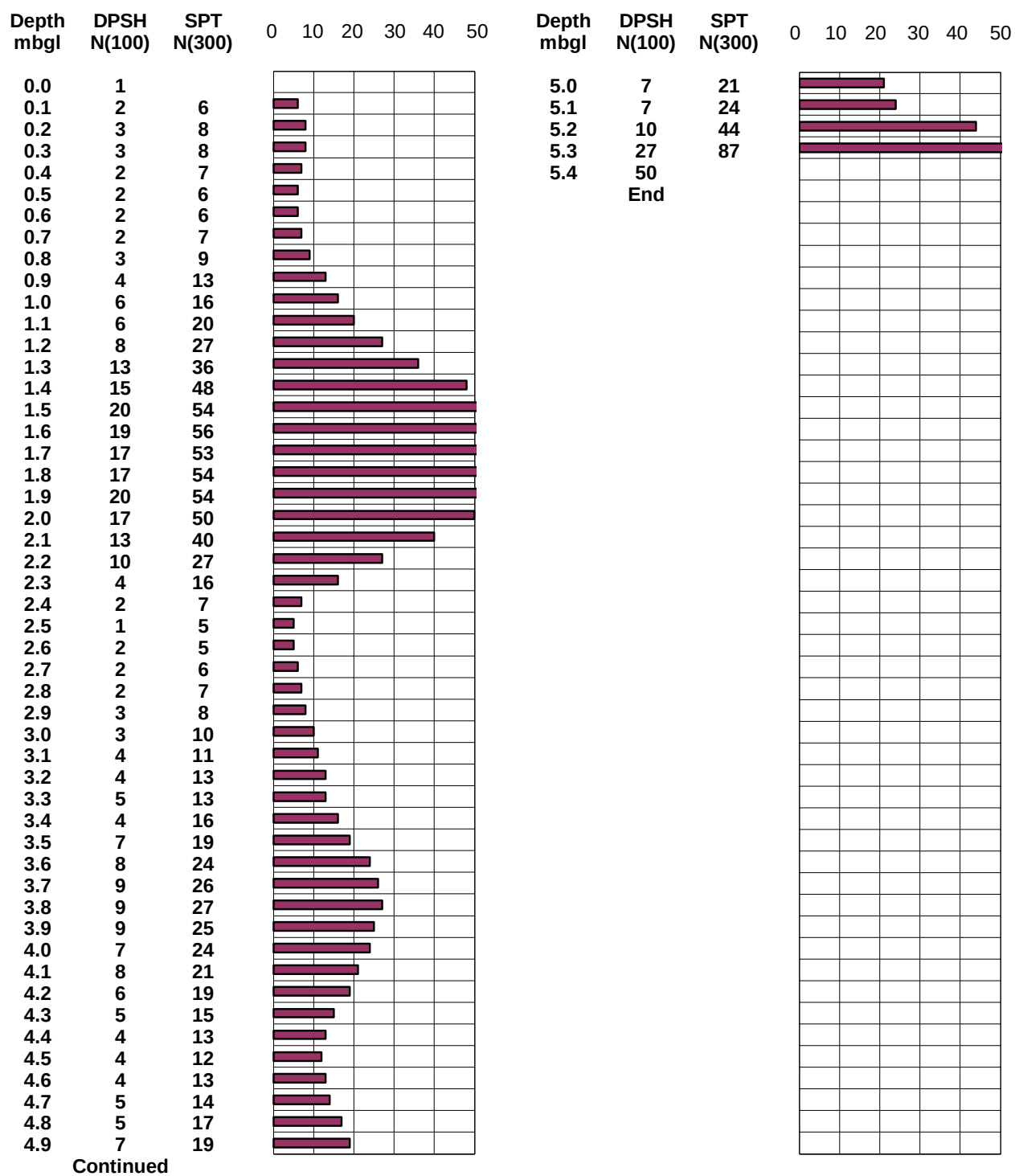
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP308		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



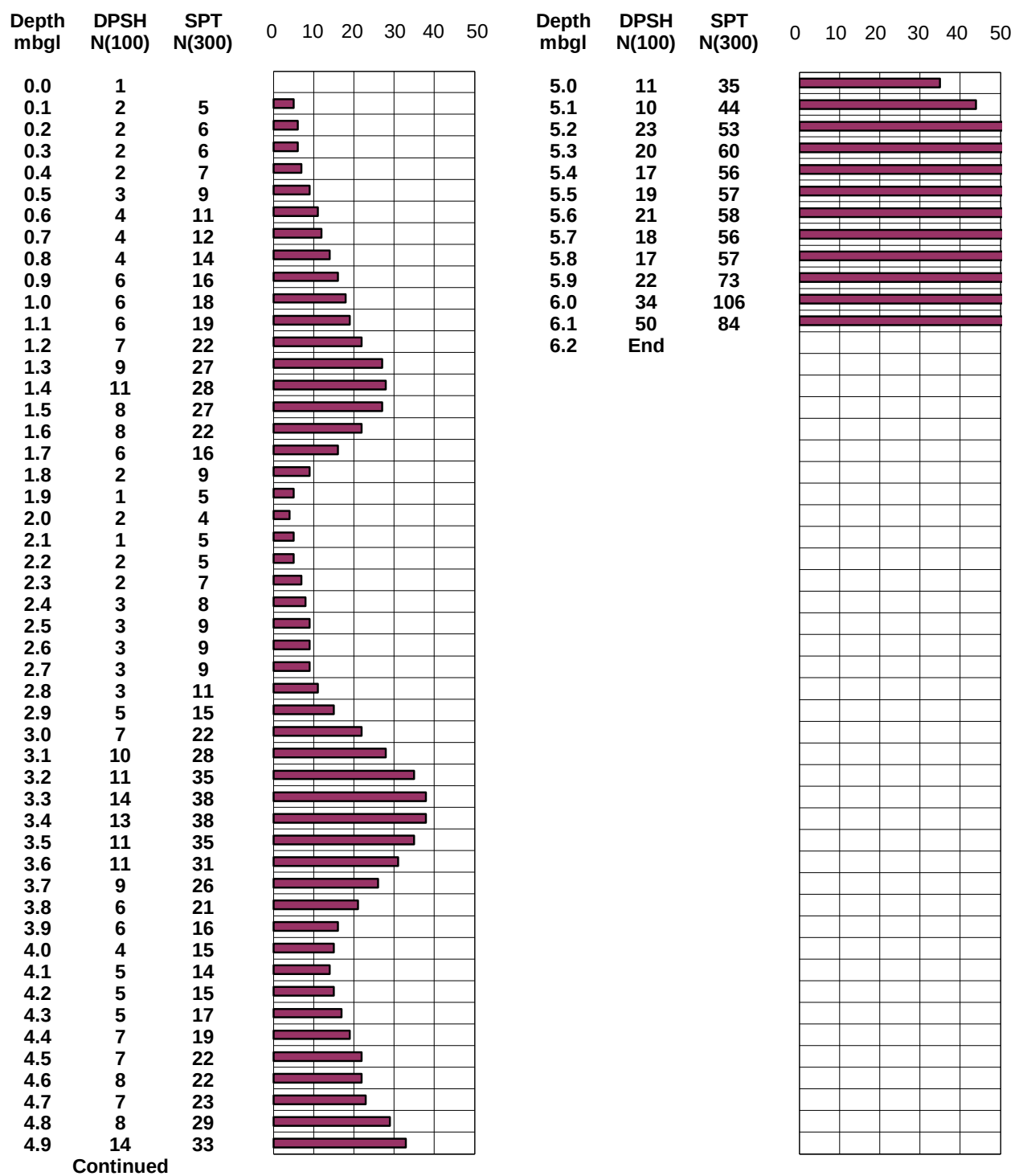
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP309
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



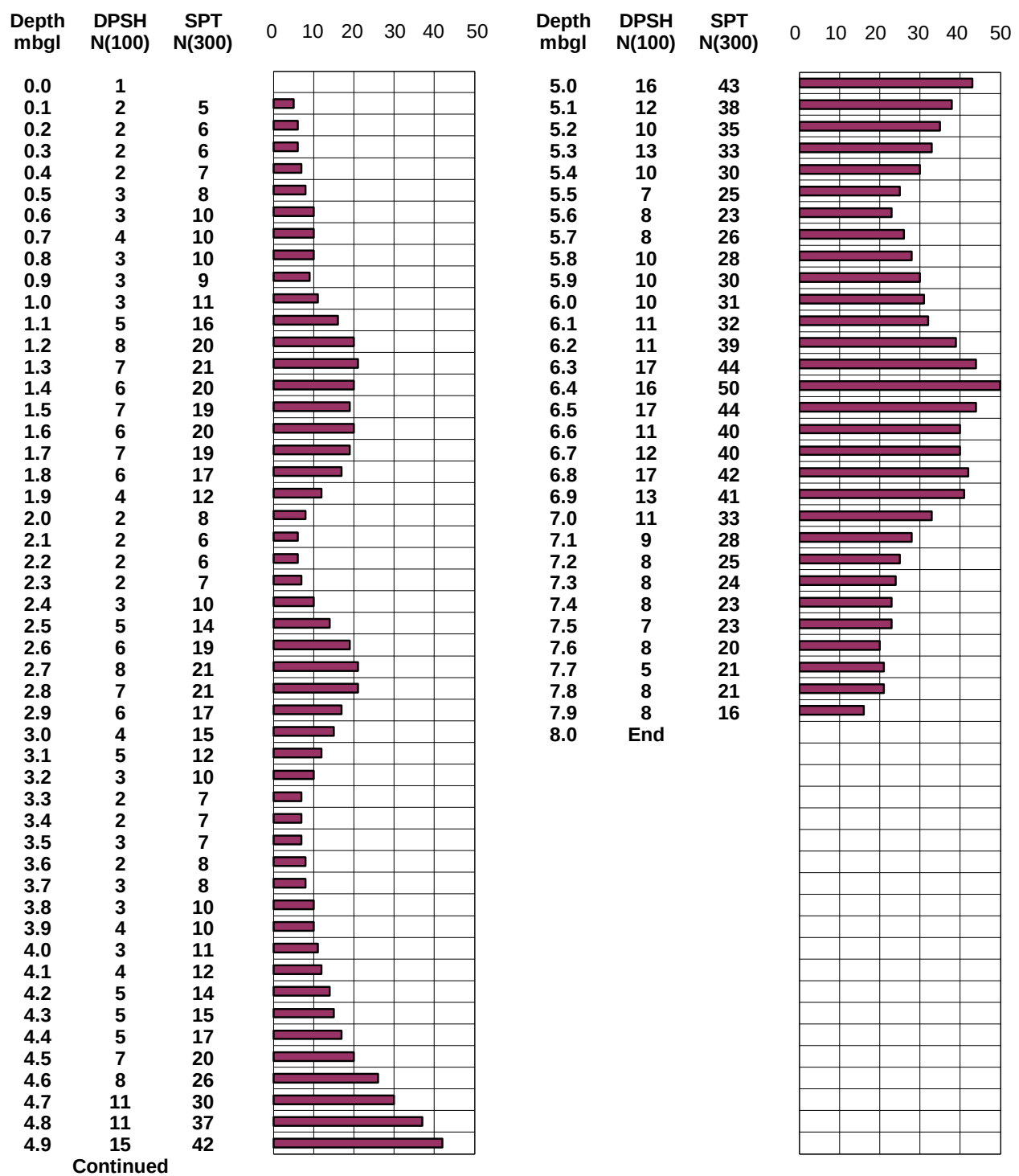
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP310
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



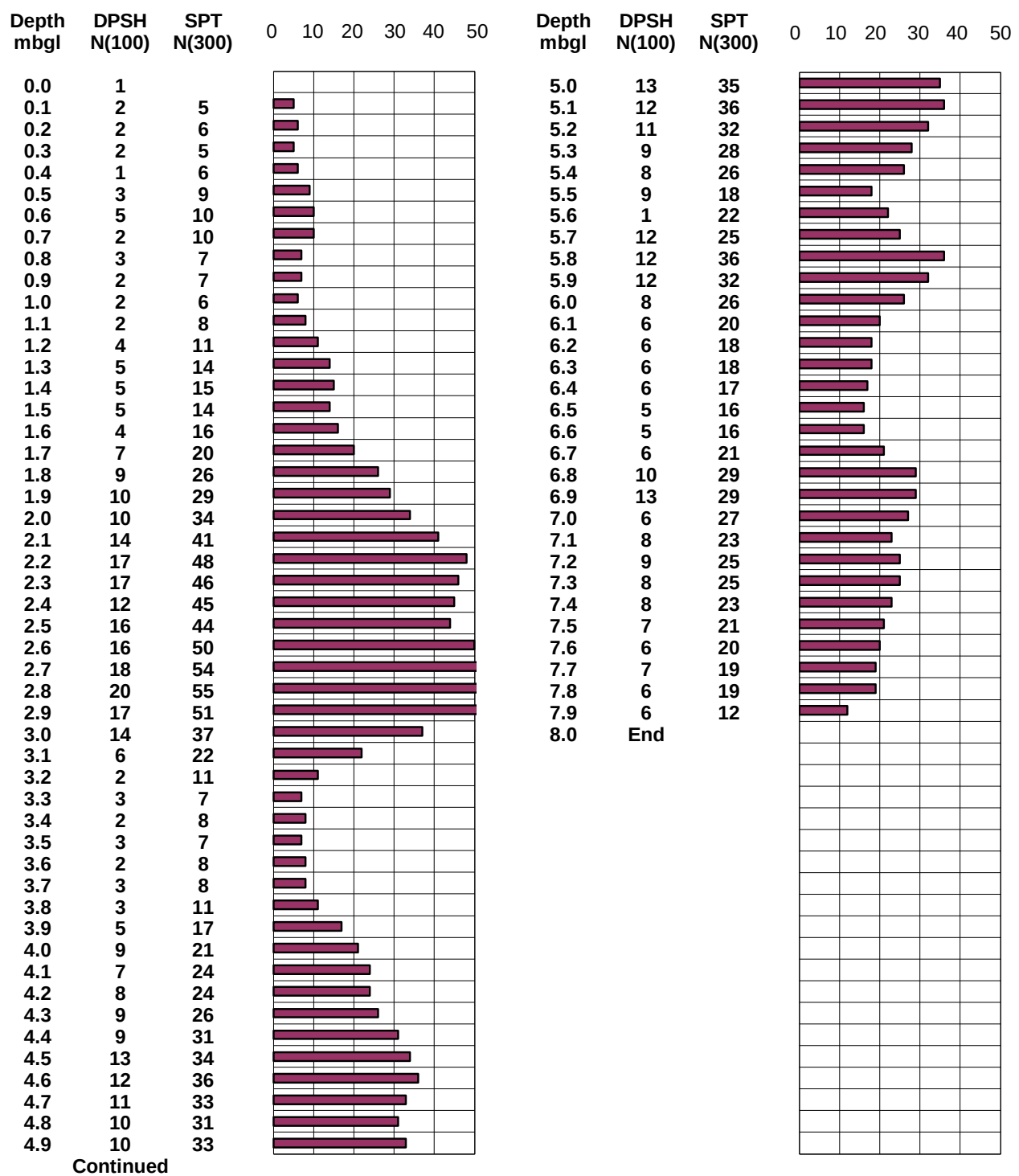
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP311
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



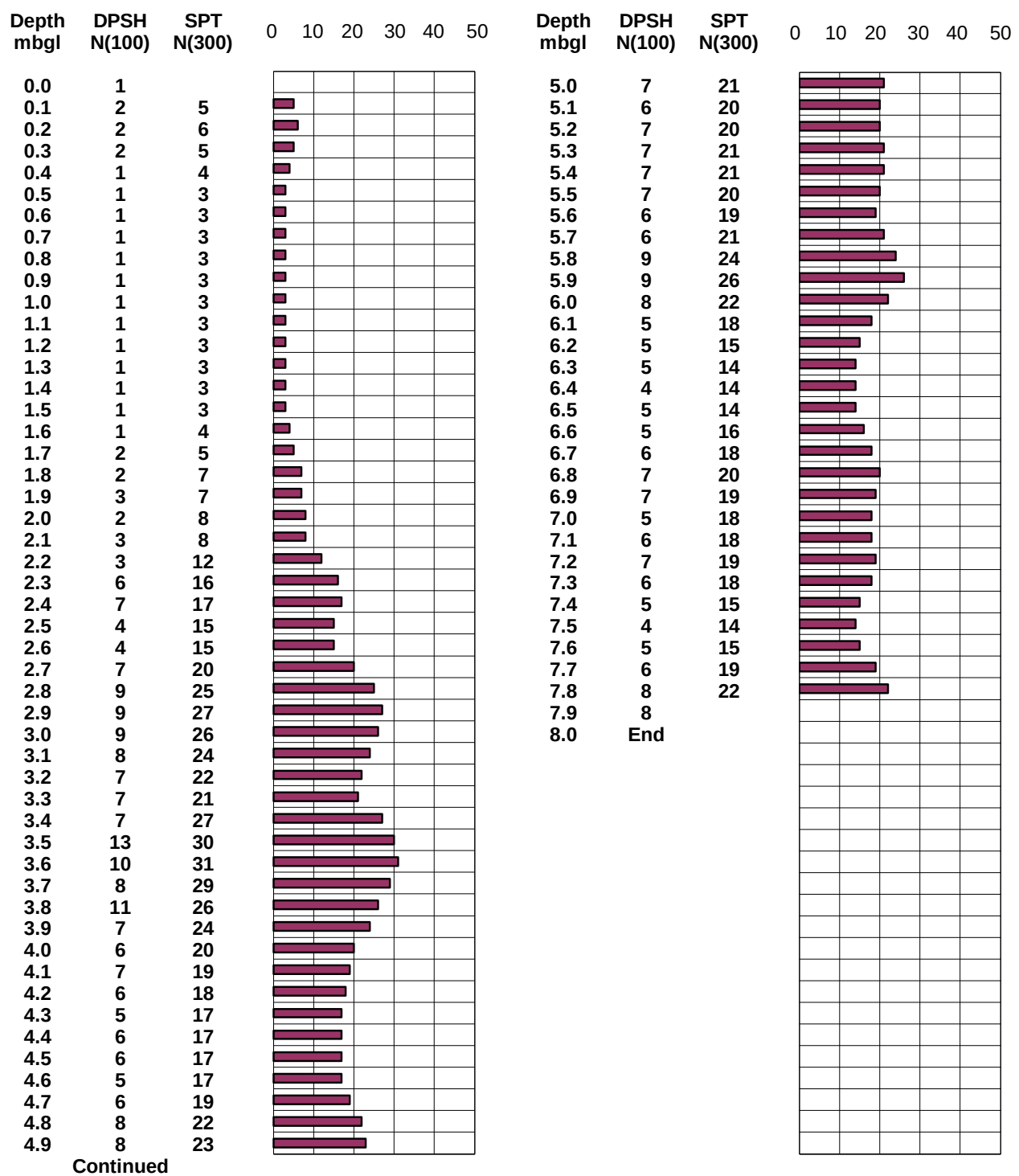
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP312
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
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Figure:	-	Scale:	Not To Scale		



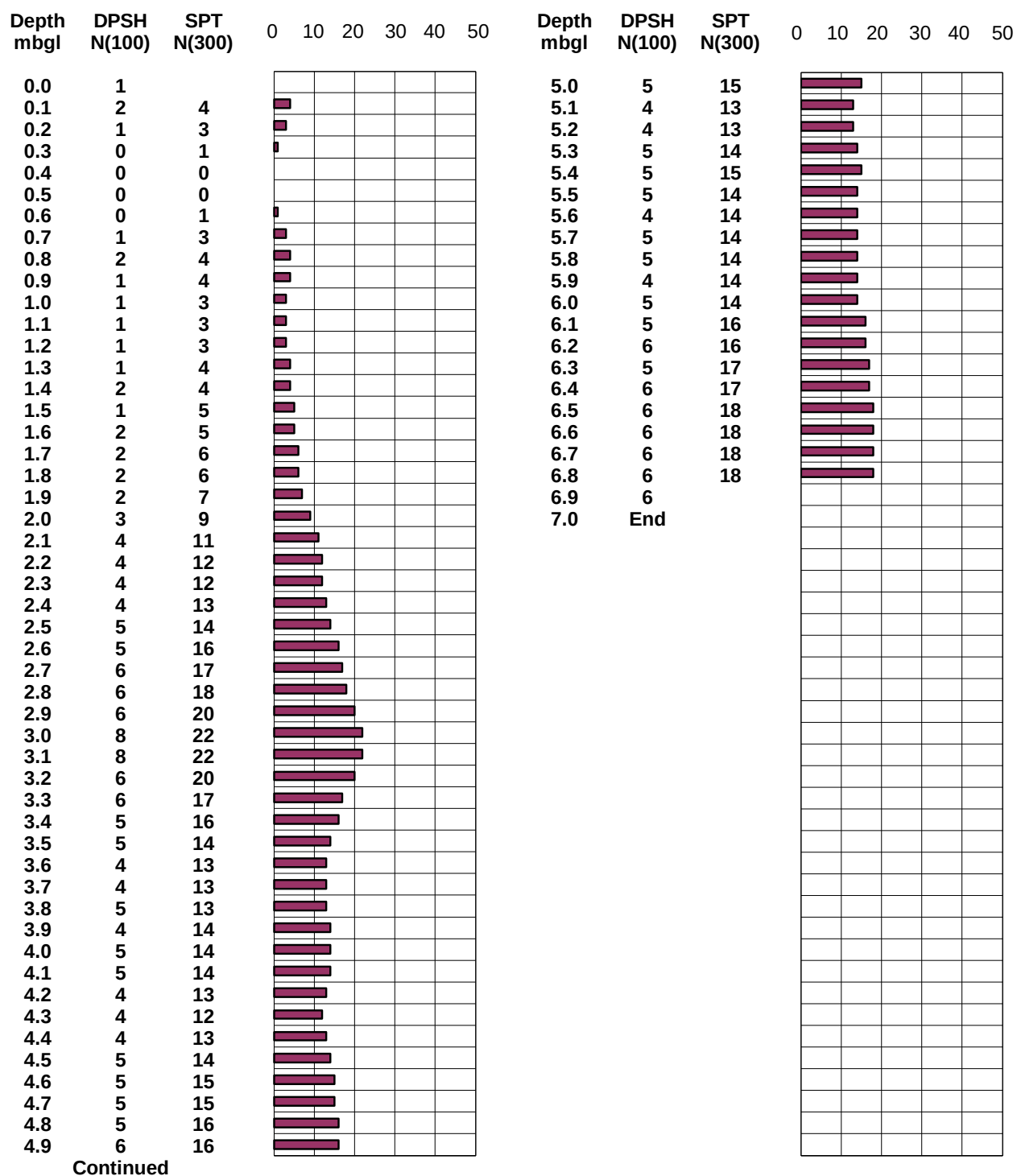
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP313
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
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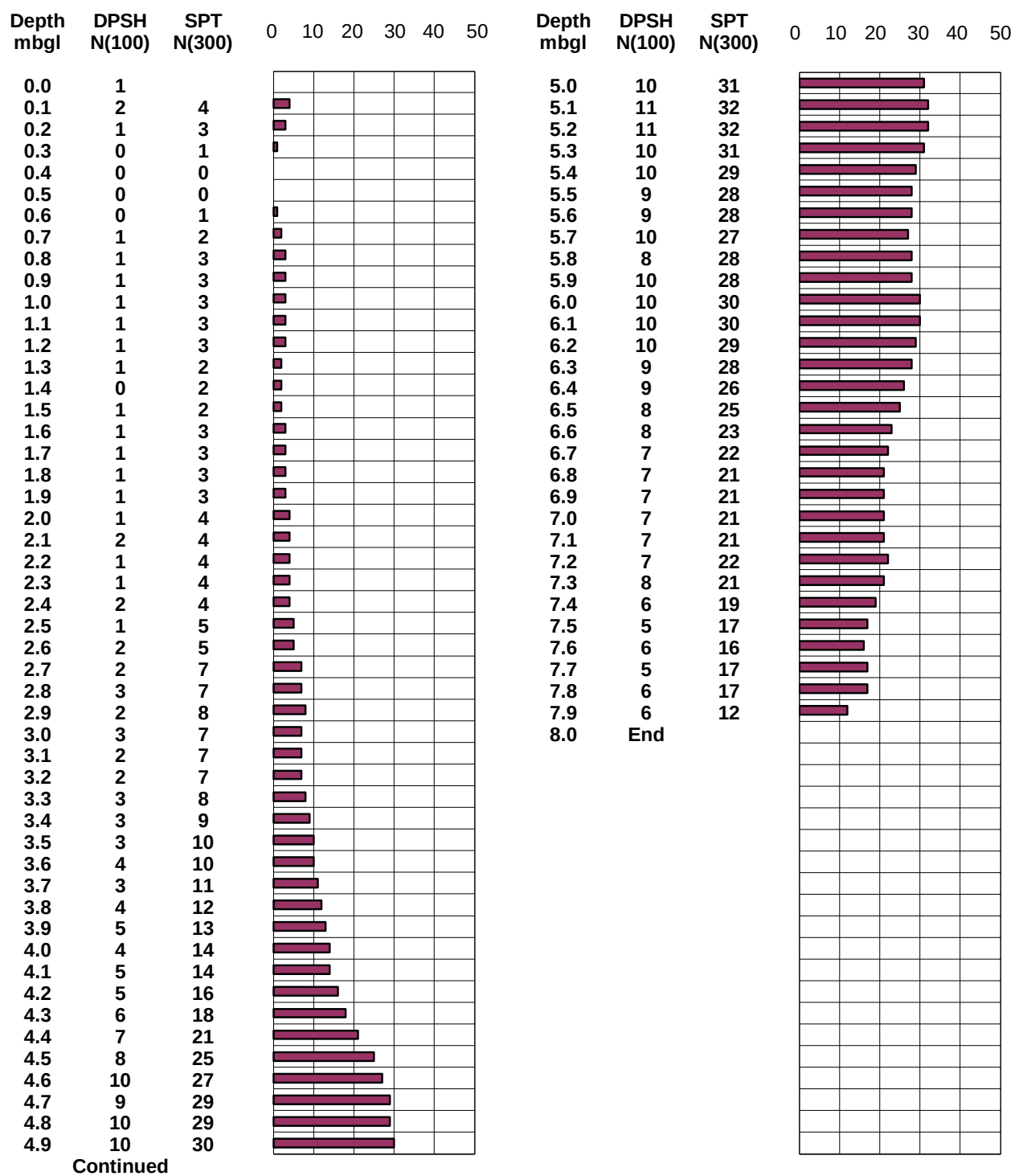
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP314
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



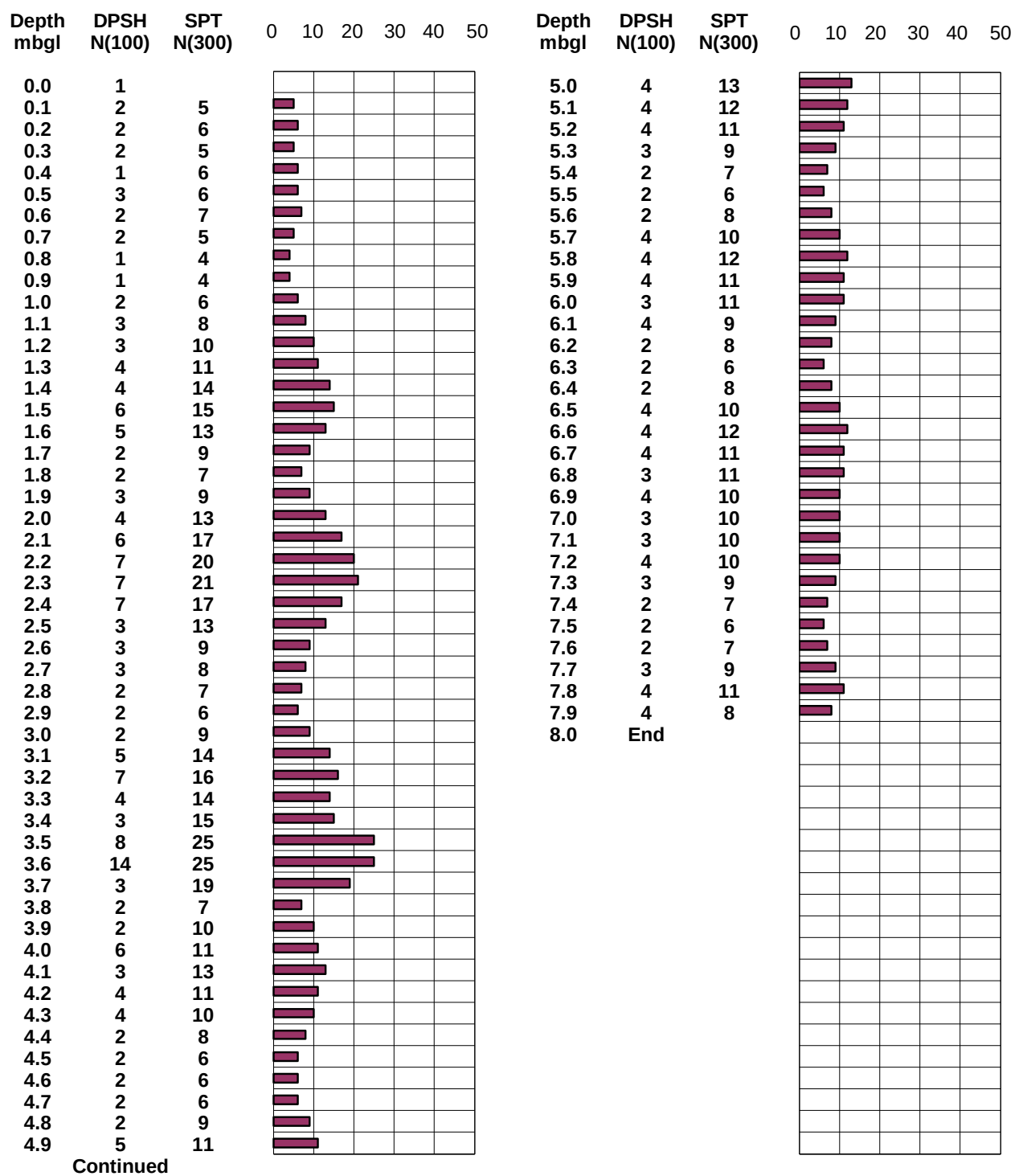
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP315		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



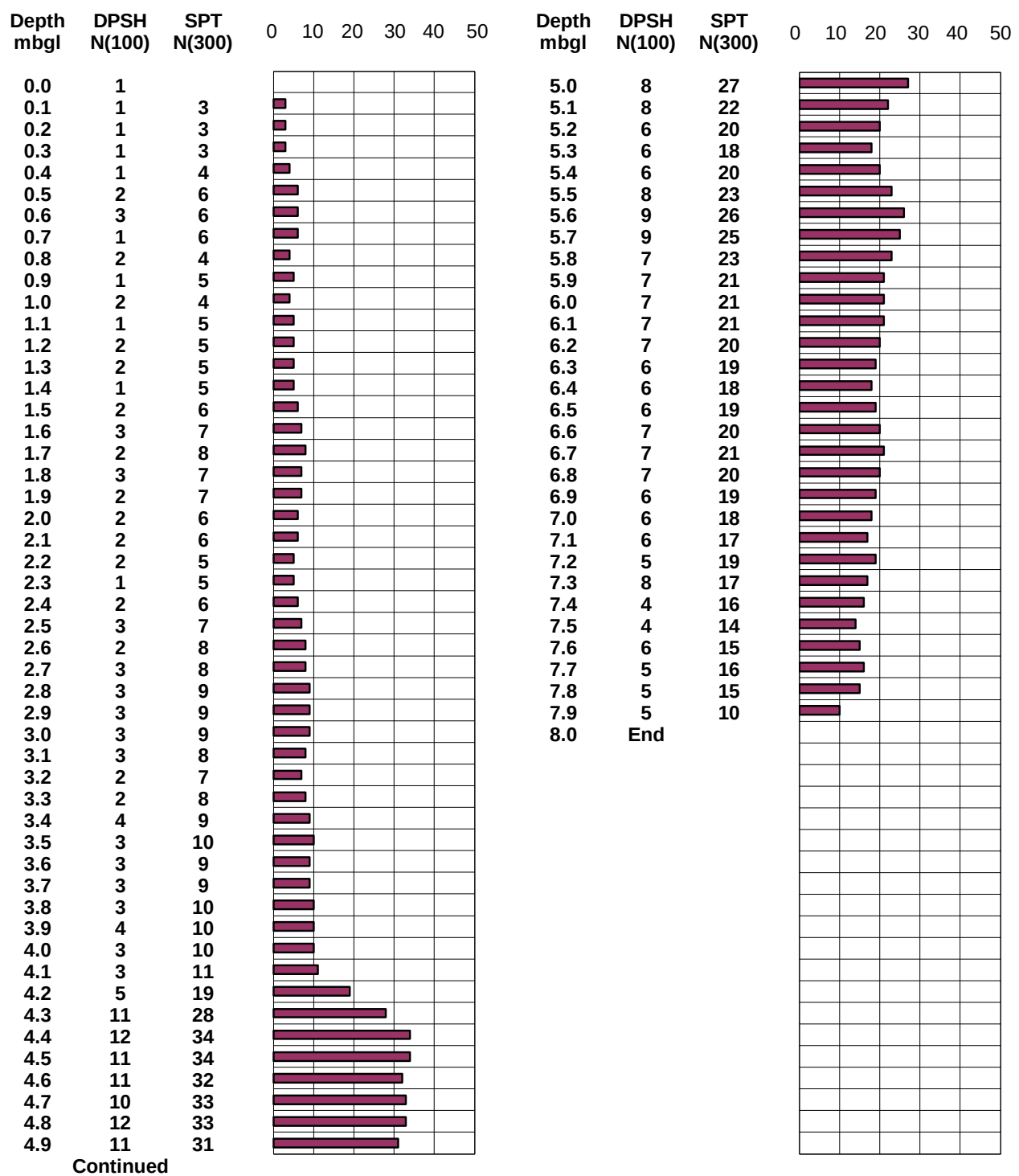
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP316
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



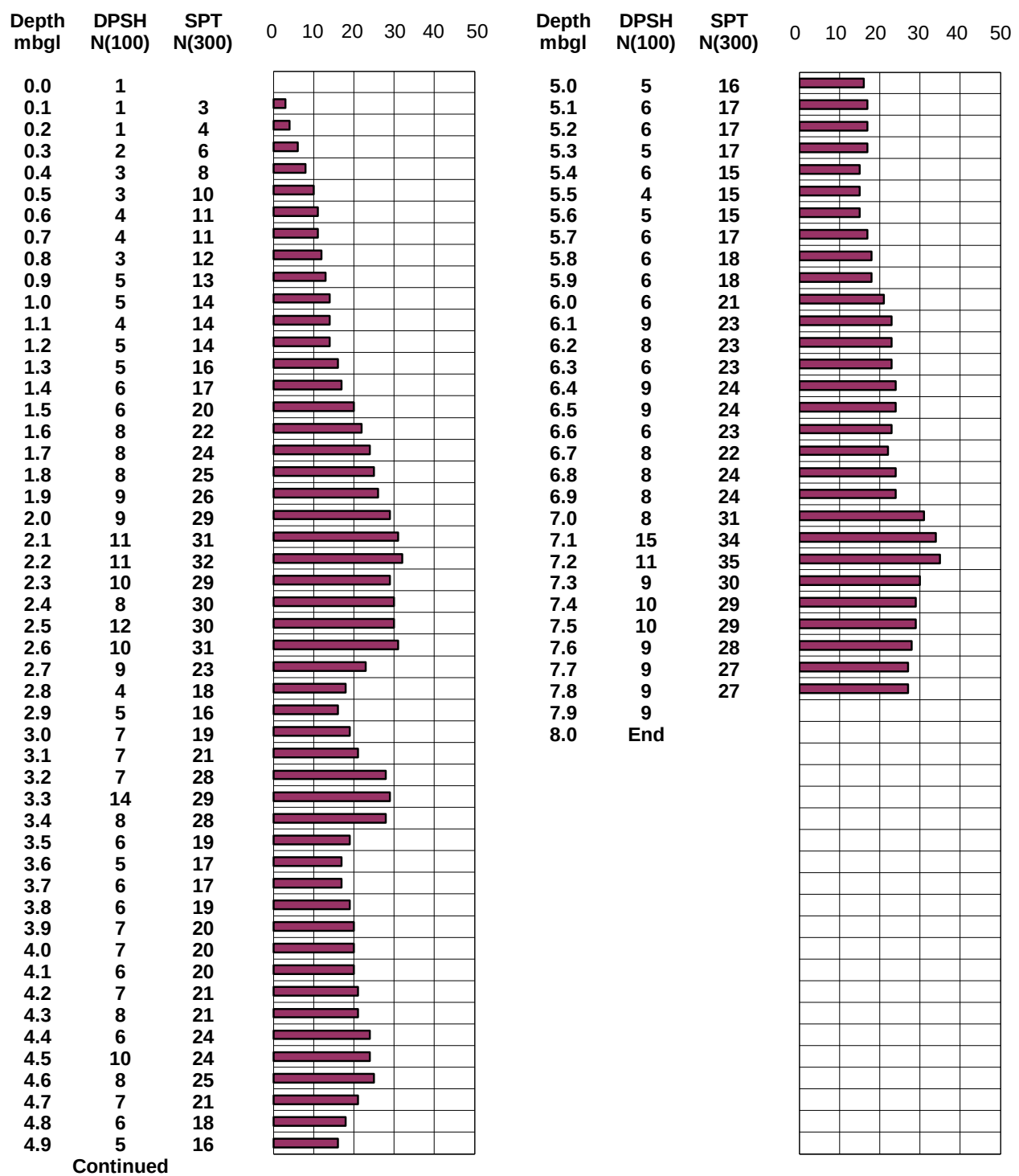
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP317
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



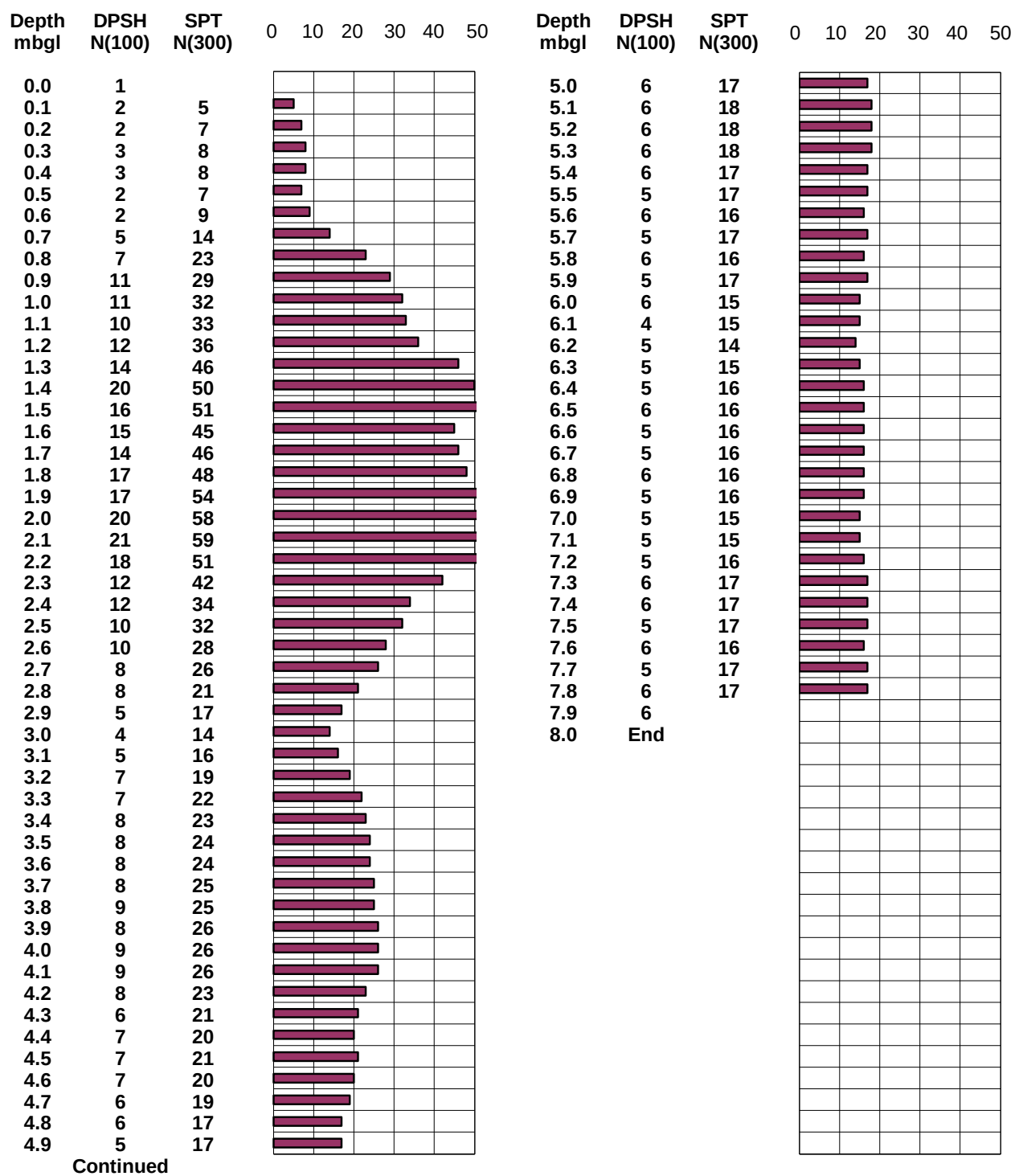
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP318
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



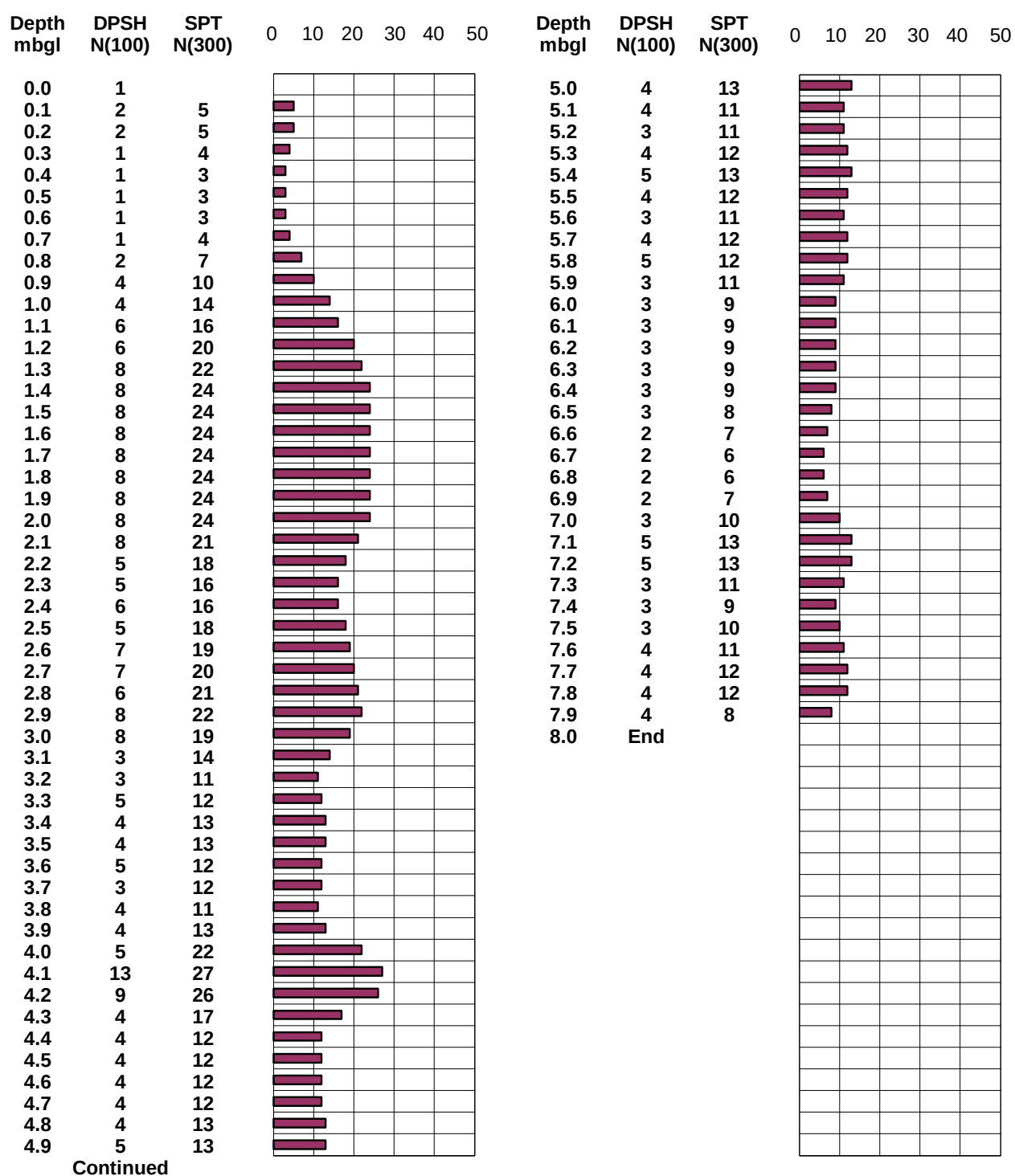
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP319
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



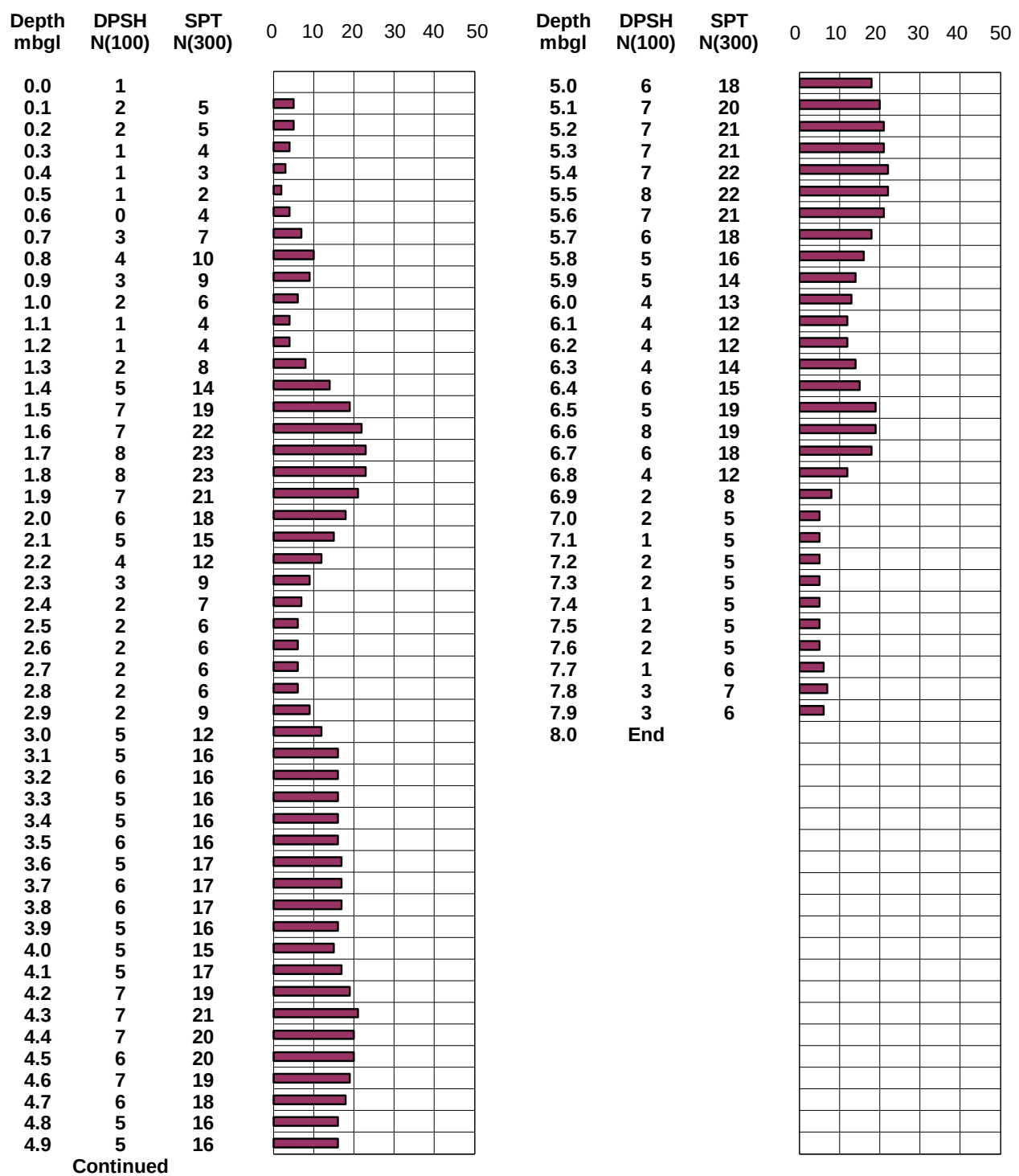
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP320
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



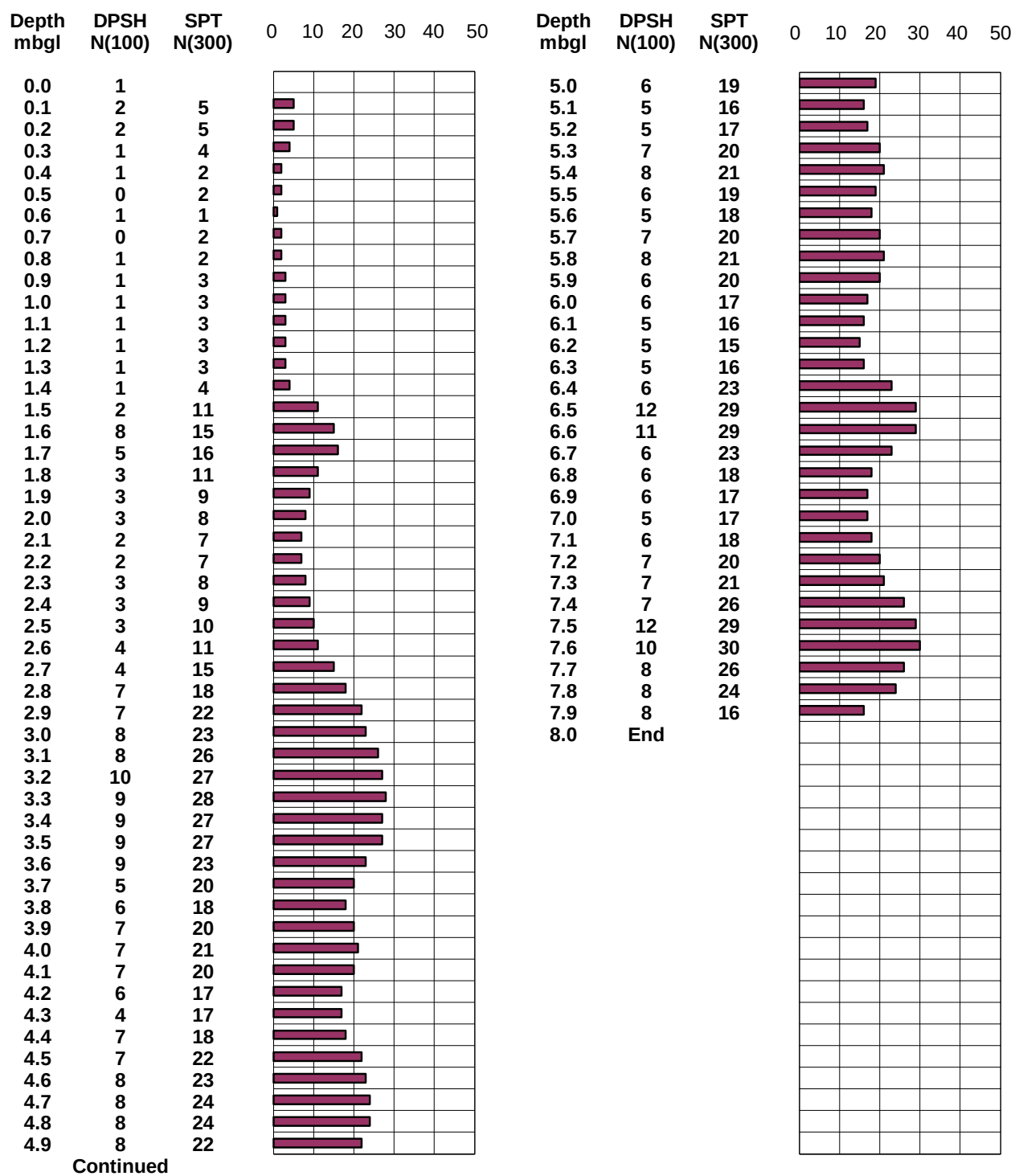
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP321		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



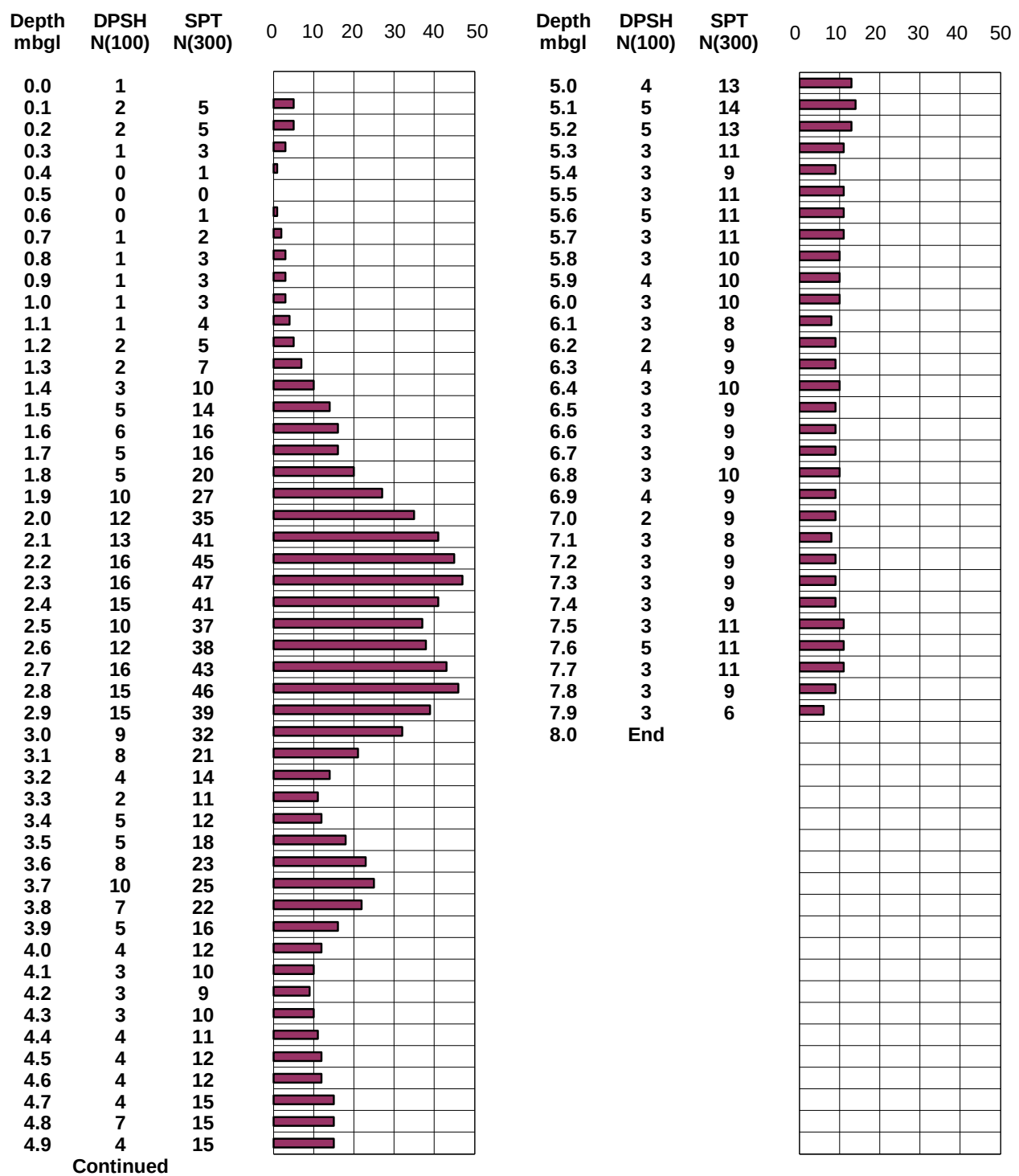
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP323
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



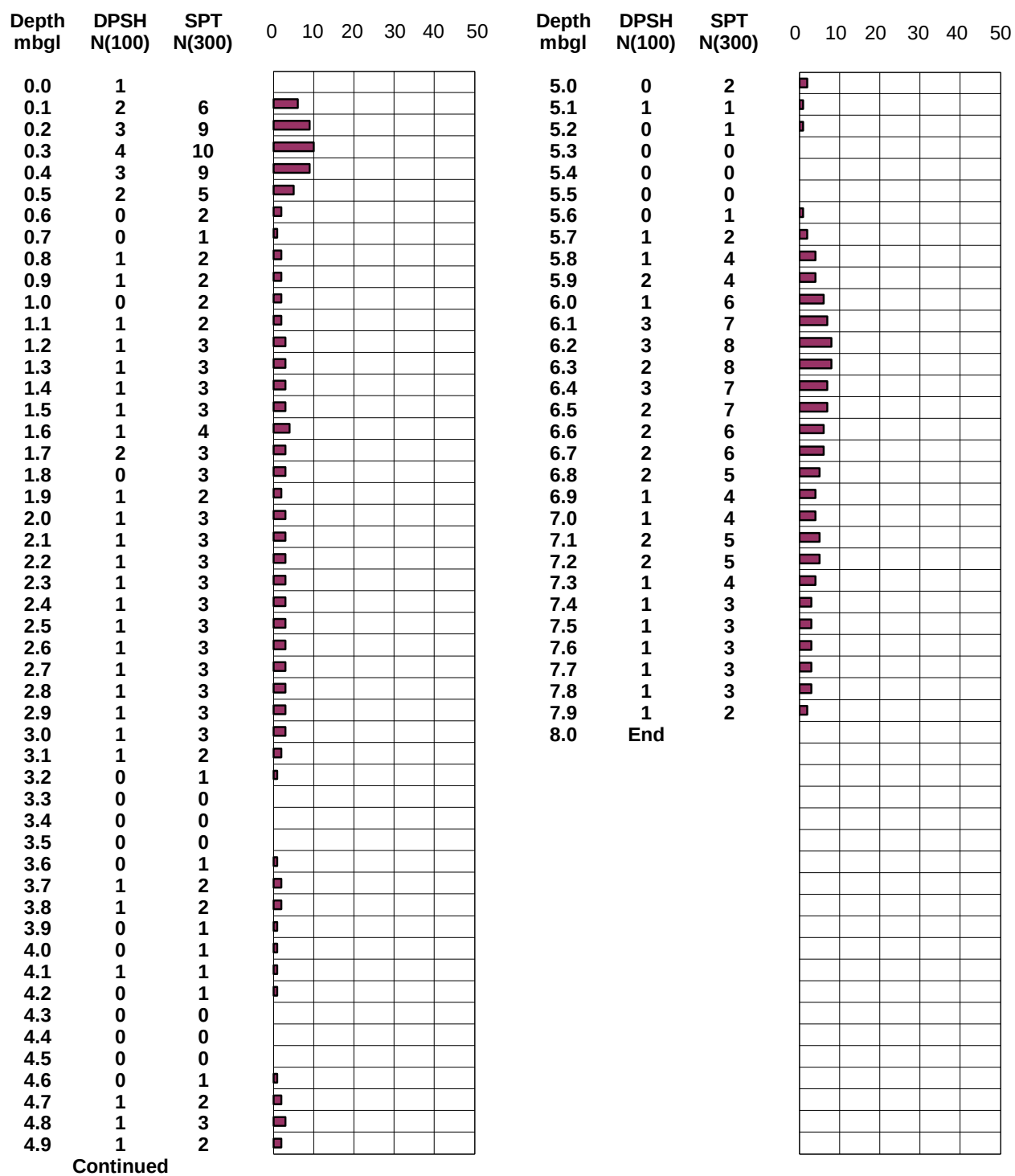
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP324	
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972		
Ref No:	GE20079	Rev:	0			
Drawn:	-	Date:				
Figure:	-	Scale:	Not To Scale			



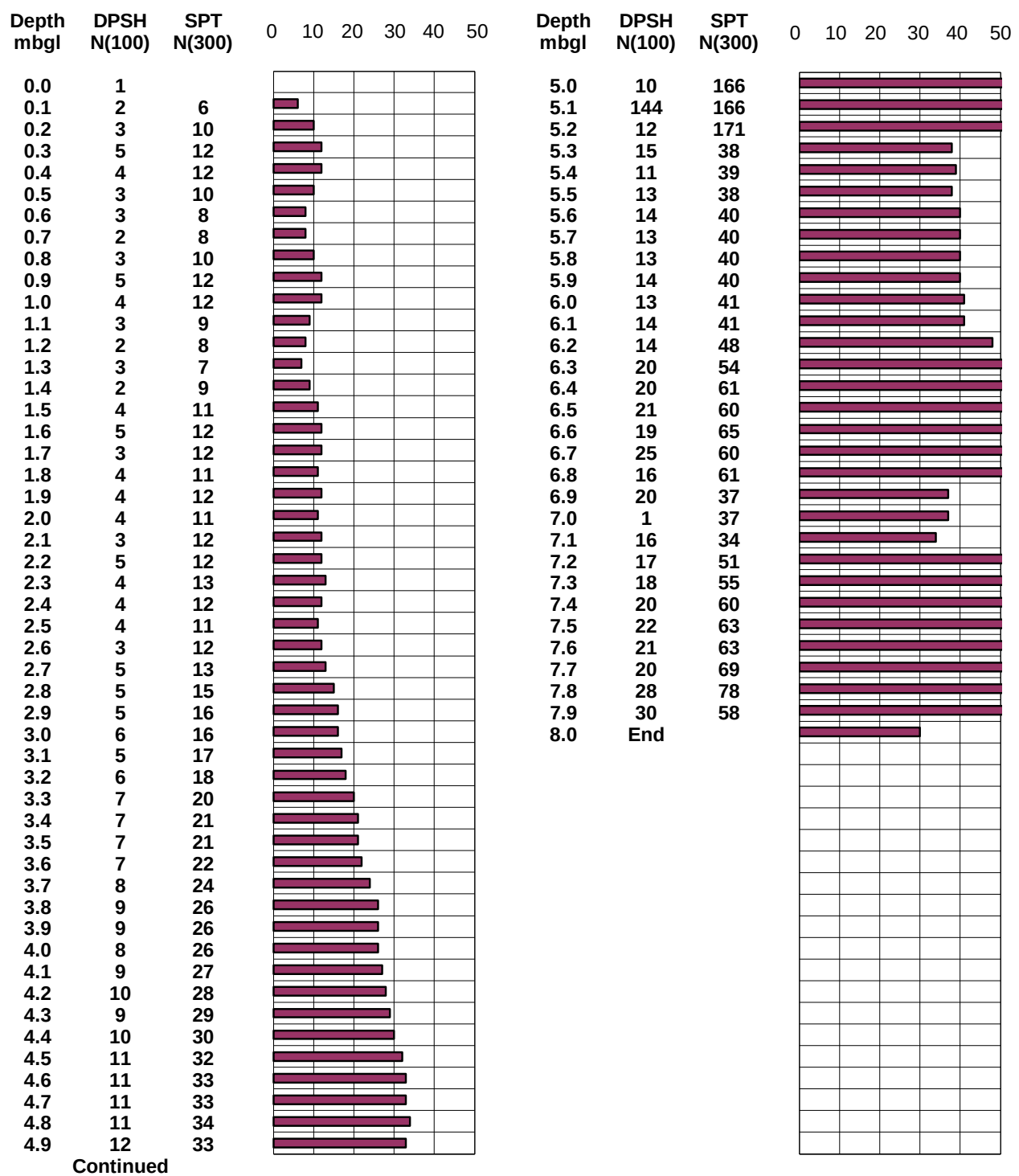
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP325
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



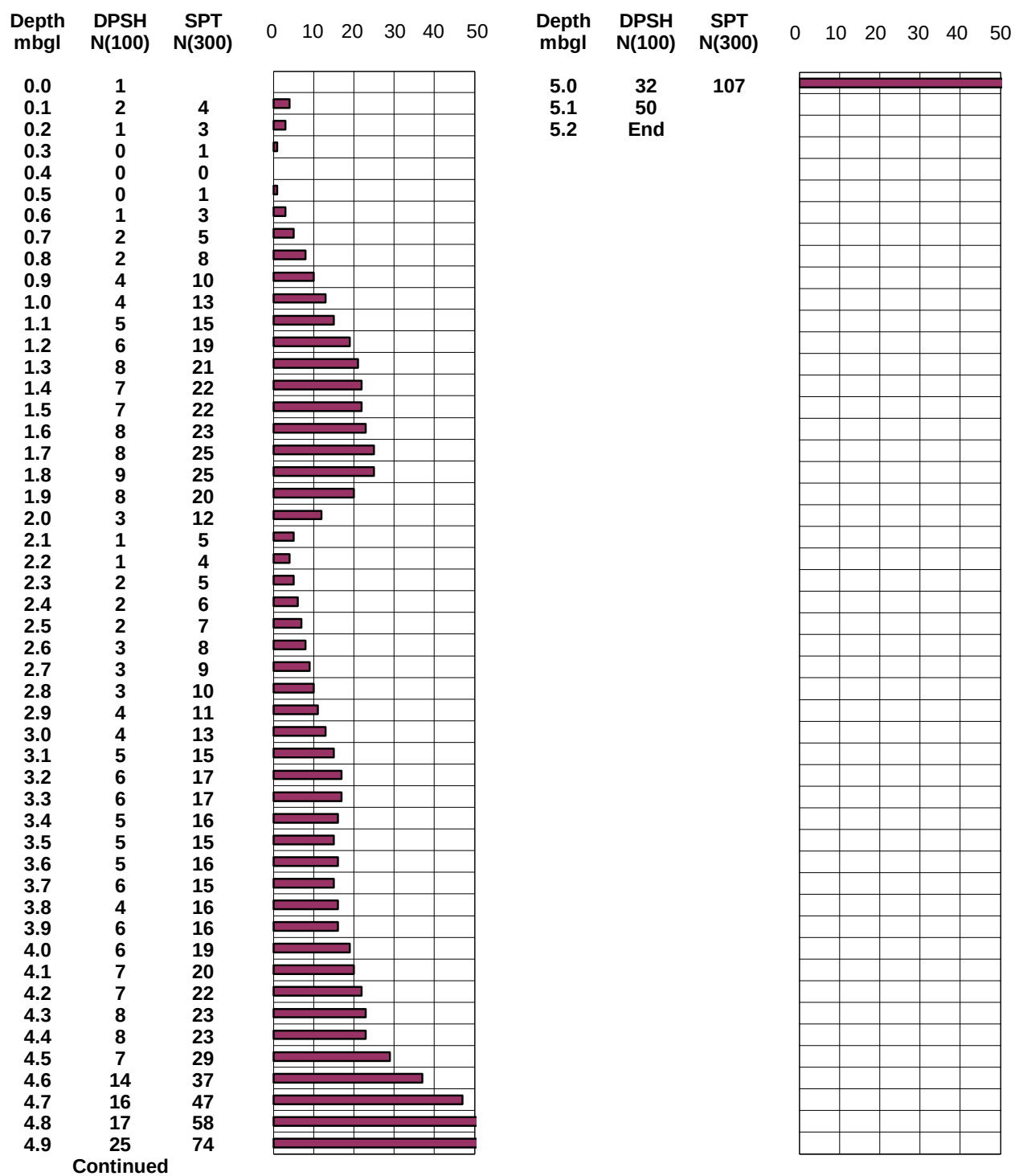
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP326		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



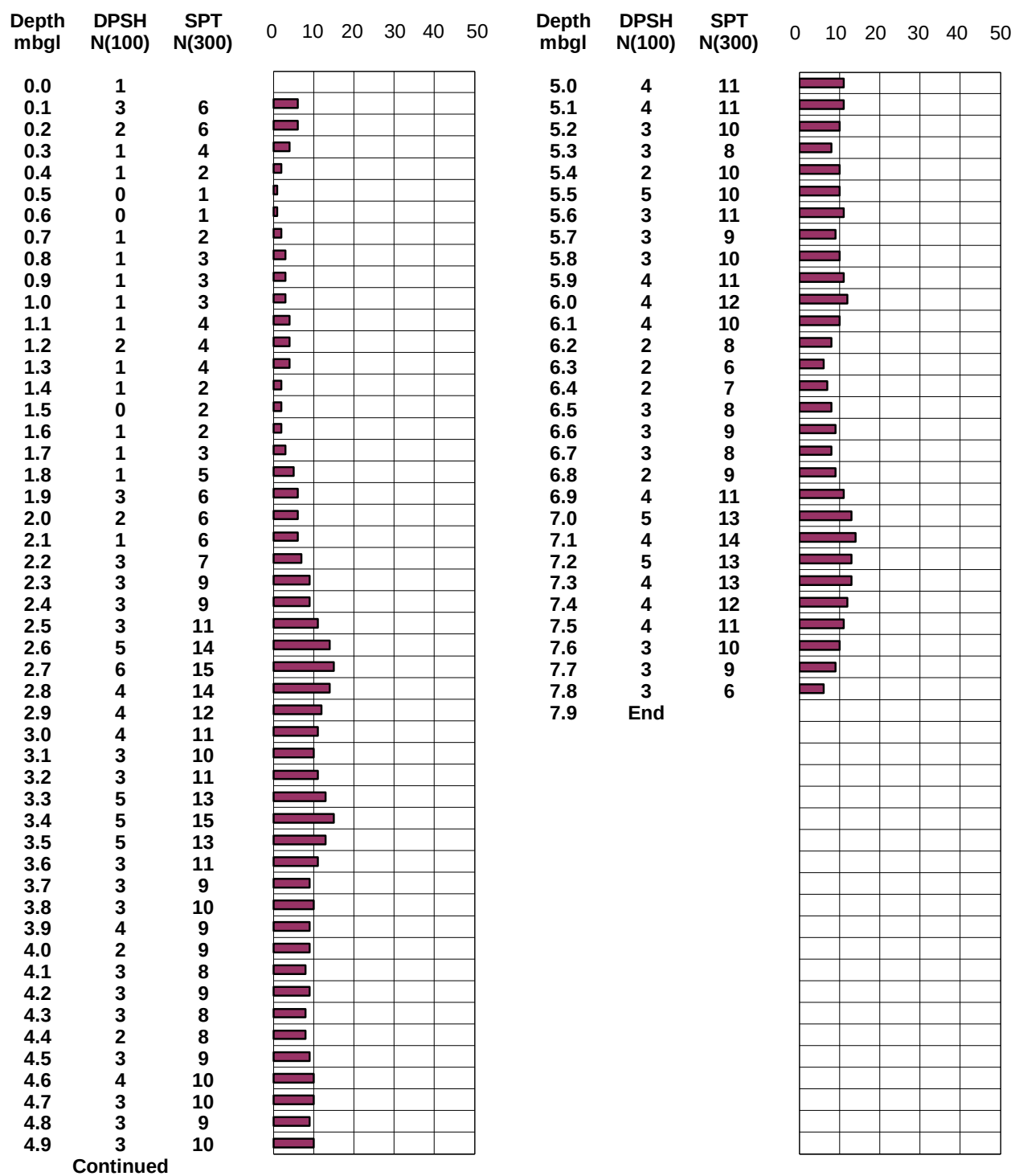
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP327
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



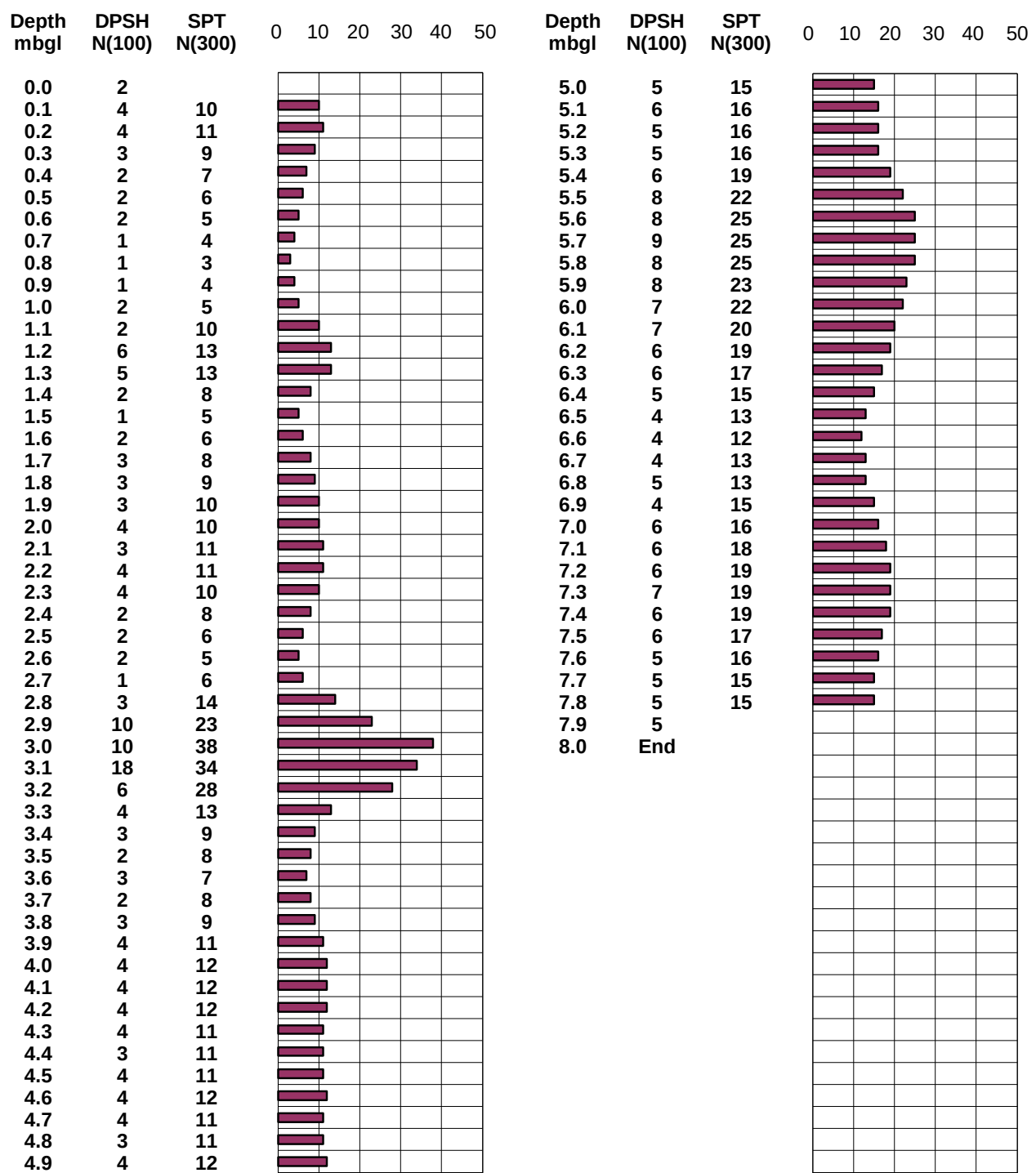
Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP328		
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972			
Ref No:	GE20079	Rev:	0				
Drawn:	-	Date:					
Figure:	-	Scale:	Not To Scale				



Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP329
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		



Note: DPSH'N' and SPT'N' directly correlate. SPT'N'(300) calculated as sum of DPSH'N' over 300mm

Project:	Reading Golf Course			Title:	DYNAMIC PROBE LOG DP330
Client:	Vistry			Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE20079	Rev:	0		
Drawn:	-	Date:			
Figure:	-	Scale:	Not To Scale		

APPENDIX C

Soakage Test Results



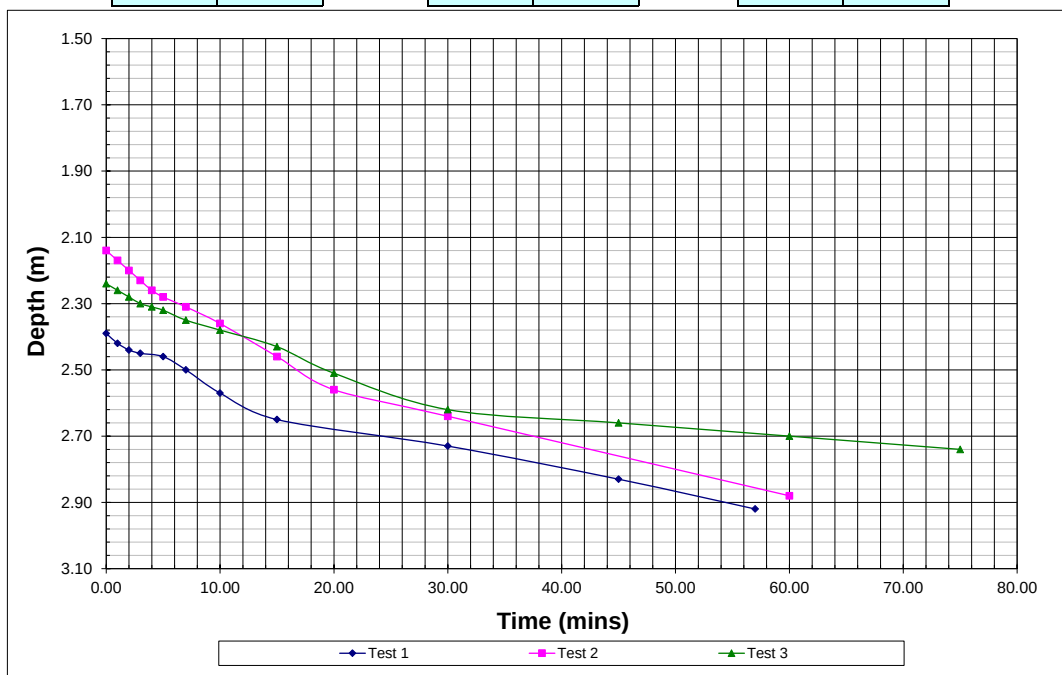
	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : Reading Golf Course Client : Vistry		Job No. : GE20079 Date : 22/07/2021

Pit reference	TP201		
Test reference	Test1	Test2	Test3
Pit depth (m)	3.03	3.07	2.90
Pit width (m)	0.50	0.50	0.50
Pit length (m)	2.00	2.00	2.00
Depth to standing water (m)			

Test 1	
Time (min)	Depth (m)
0.0	2.39
1.0	2.42
2.0	2.44
3.0	2.45
5.0	2.46
7.0	2.50
10.0	2.57
15.0	2.65
30.0	2.73
45.0	2.83
57.0	2.92

Test 2	
Time (min)	Depth (m)
0.0	2.14
1.0	2.17
2.0	2.20
3.0	2.23
4.0	2.26
5.0	2.28
7.0	2.31
10.0	2.36
15.0	2.46
20.0	2.56
30.0	2.64
60.0	2.88

Test 3	
Time (min)	Depth (m)
0.0	2.24
1.0	2.26
2.0	2.28
3.0	2.30
4.0	2.31
5.0	2.32
7.0	2.35
10.0	2.38
15.0	2.43
20.0	2.51
30.0	2.62
45.0	2.66
60.0	2.70
75.0	2.74



Max. depth (m)	3.03	3.07	2.90
Effective depth (m)	0.64	0.93	0.66
75% effective depth (m)	2.55	2.37	2.41
50% effective depth (m)	2.71	2.61	2.57
25% effective depth (m)	2.87	2.84	2.74
t75 (min)	9.00	10.50	12.00
t50 (min)	26.00	26.00	26.00
t25 (min)	50.00	55.00	75.00
Vp 75-25	0.32	0.47	0.33
ap 50	2.6	3.325	2.65
tp 75-25	41.00	44.50	63.00

Soil infiltration rate (m/s)	5.0E-05	5.2E-05	3.3E-05
Soil infiltration rate (mm/hr)	1.80E+02	1.89E+02	1.19E+02

Notes:

- 1 Blue cells require input data
- 2 Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- 3 First line of table must be depth at time = 0

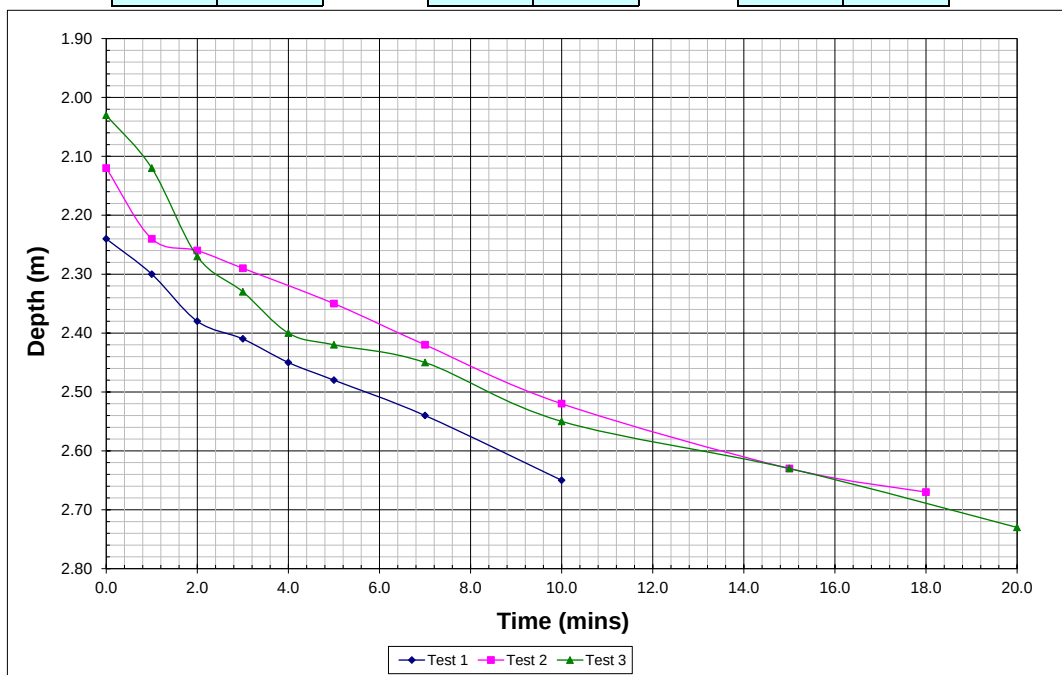
	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : Reading Golf Course Client : Vistry		Job No. : GE20079 Date : 22/07/2021

Pit reference	TP202		
Test reference	Test1	Test2	Test3
Pit depth (m)	2.77	2.78	2.80
Pit width (m)	0.50	0.50	0.50
Pit length (m)	2.00	2.00	2.00
Depth to standing water (m)			

Test 1	
Time (min)	Depth (m)
0.0	2.24
1.0	2.30
2.0	2.38
3.0	2.41
4.0	2.45
5.0	2.48
7.0	2.54
10.0	2.65

Test 2	
1	Depth (m)
0.0	2.12
1.0	2.24
2.0	2.26
3.0	2.29
5.0	2.35
7.0	2.42
10.0	2.52
15.0	2.63
18.0	2.67

Test 3	
Time (min)	Depth (m)
0.0	2.03
1.0	2.12
2.0	2.27
3.0	2.33
4.0	2.40
5.0	2.42
7.0	2.45
10.0	2.55
15.0	2.63
20.0	2.73



Max. depth (m)	2.77	2.78	2.80
Effective depth (m)	0.53	0.66	0.77
75% effective depth (m)	2.37	2.29	2.22
50% effective depth (m)	2.51	2.45	2.42
25% effective depth (m)	2.64	2.62	2.61
t75 (min)	1.80	3.00	1.80
t50 (min)	6.00	8.00	7.00
t25 (min)	9.60	14.40	13.80
Vp 75-25	0.27	0.33	0.39
ap 50	2.325	2.65	2.925
tp 75-25	7.80	11.40	12.00

Soil infiltration rate (m/s)	2.4E-04	1.8E-04	1.8E-04
Soil infiltration rate (mm/hr)	8.77E+02	6.55E+02	6.58E+02

Notes:

- Blue cells require input data
- Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- First line of table must be depth at time = 0

	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : Reading Golf Course Client : Vistry		Job No. : GE20079 Date : 22/07/2021

Pit reference	TP203		
Test reference	Test1	Test2	Test3
Pit depth (m)	2.96	2.68	2.67
Pit width (m)	2.00	2.00	2.00
Pit length (m)	0.50	0.50	0.50
Depth to standing water (m)			

Test 1

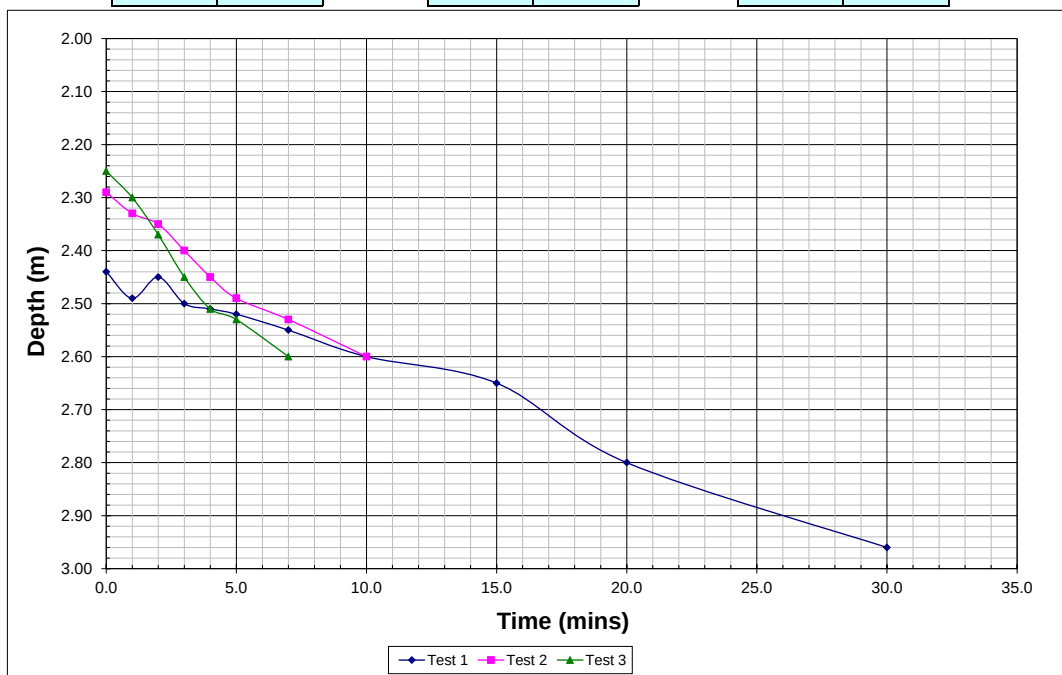
Time (min)	Depth (m)
0.0	2.44
1.0	2.49
2.0	2.45
3.0	2.50
4.0	2.51
5.0	2.52
7.0	2.55
10.0	2.60
15.0	2.65
20.0	2.80
30.0	2.96

Test 2

Time (min)	Depth (m)
0.0	2.29
1.0	2.33
2.0	2.35
3.0	2.40
4.0	2.45
5.0	2.49
7.0	2.53
10.0	2.60

Test 3

Time (min)	Depth (m)
0.0	2.25
1.0	2.30
2.0	2.37
3.0	2.45
4.0	2.51
5.0	2.53
7.0	2.60



Max. depth (m)	2.96	2.68	2.67
Effective depth (m)	0.52	0.39	0.42
75% effective depth (m)	2.57	2.39	2.36
50% effective depth (m)	2.70	2.49	2.46
25% effective depth (m)	2.83	2.58	2.57
t75 (min)	8.00	2.80	1.90
t50 (min)	16.60	5.00	3.20
t25 (min)	21.50	9.20	6.00
Vp 75-25	0.26	0.20	0.21
ap 50	2.3	1.975	2.05
tp 75-25	13.50	6.40	4.10

Soil infiltration rate (m/s)	1.4E-04	2.6E-04	4.2E-04
Soil infiltration rate (mm/hr)	5.02E+02	9.26E+02	1.50E+03

Notes:

- Blue cells require input data
- Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- First line of table must be depth at time = 0

	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : Reading Golf Course Client : Vistry		Job No. : GE20079 Date : 22/07/2021

Pit reference	TP204		
Test reference	Test1	Test2	Test3
Pit depth (m)	3.00	3.00	3.00
Pit width (m)	1.80	1.80	1.80
Pit length (m)	0.50	0.50	0.50
Depth to standing water (m)			

Test 1

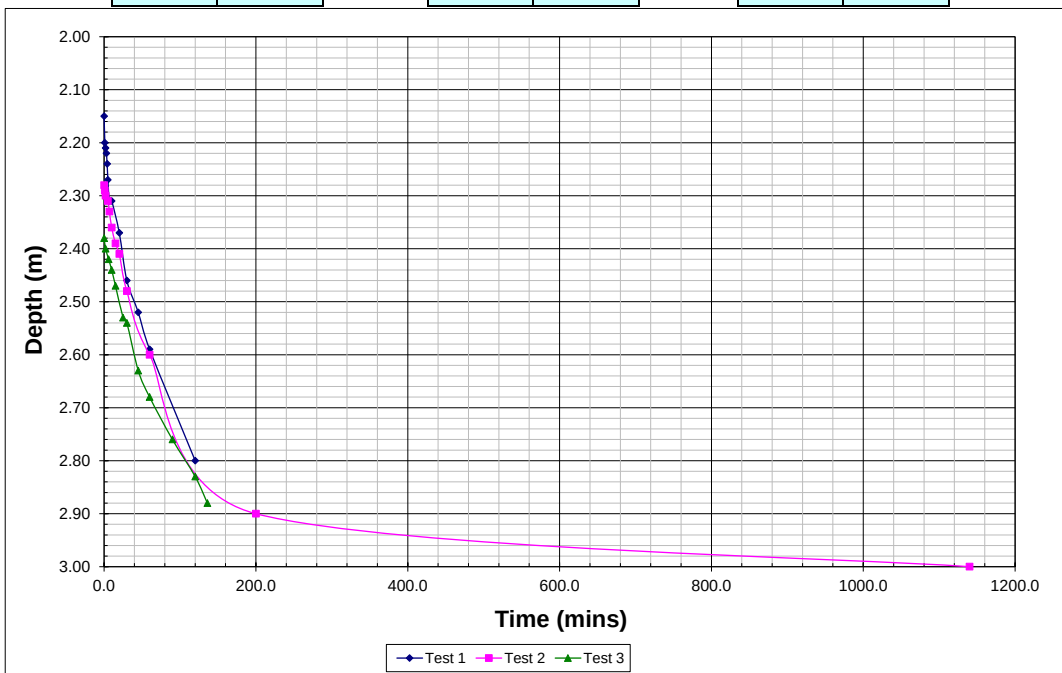
Time (min)	Depth (m)
0.0	2.15
1.0	2.20
2.0	2.21
3.0	2.22
4.0	2.24
5.0	2.27
7.0	2.31
10.0	2.31
20.0	2.37
30.0	2.46
45.0	2.52
60.0	2.59
120.0	2.80

Test 2

Time (min)	Depth (m)
0.0	2.28
1.0	2.29
2.0	2.30
5.0	2.31
7.0	2.33
10.0	2.36
15.0	2.39
20.0	2.41
30.0	2.48
60.0	2.60
200.0	2.90
1140.0	3.00

Test 3

Time (min)	Depth (m)
0.0	2.38
2.0	2.40
6.0	2.42
10.0	2.44
15.0	2.47
25.0	2.53
30.0	2.54
45.0	2.63
60.0	2.68
90.0	2.76
120.0	2.83
136.0	2.88



Max. depth (m)	3.00	3.00	3.00
Effective depth (m)	0.85	0.72	0.62
75% effective depth (m)	2.36	2.46	2.54
50% effective depth (m)	2.58	2.64	2.69
25% effective depth (m)	2.79	2.82	2.85
t75 (min)	16.00	27.00	30.00
t50 (min)	55.00	70.00	65.00
t25 (min)	115.00	115.00	125.00
Vp 75-25	0.38	0.32	0.28
ap 50	2.855	2.556	2.326
tp 75-25	99.00	88.00	95.00

Soil infiltration rate (m/s)	2.3E-05	2.4E-05	2.1E-05
Soil infiltration rate (mm/hr)	8.12E+01	8.64E+01	7.58E+01

Notes:

- Blue cells require input data
- Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- First line of table must be depth at time = 0

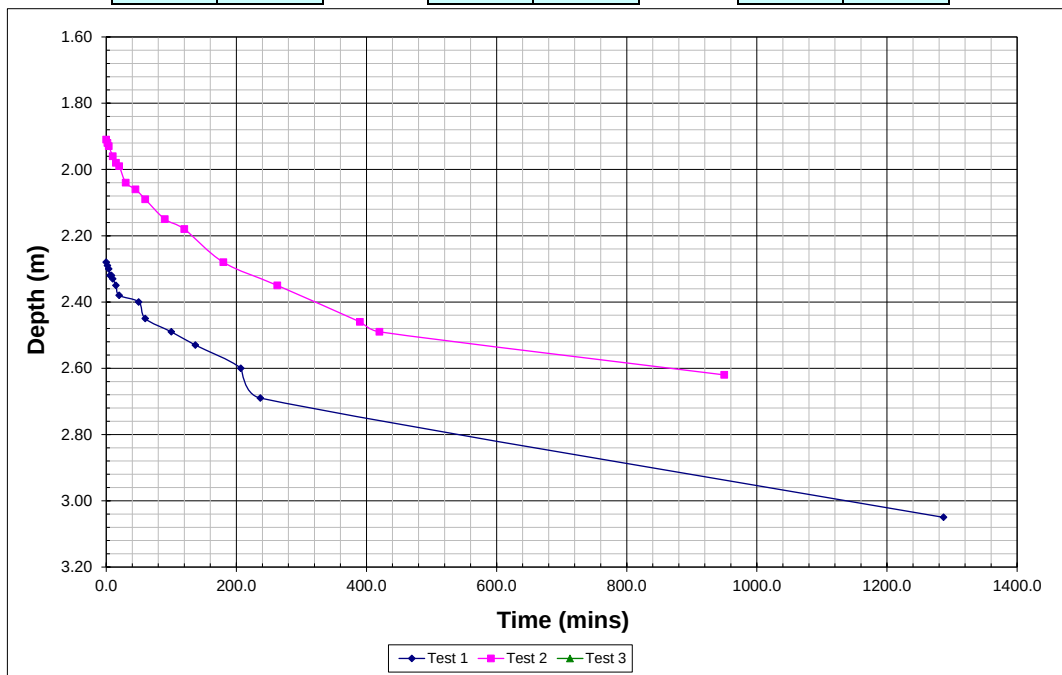
	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : Reading Golf Course Client : Vistry		Job No. : GE20079 Date : 22/07/2021

Pit reference	TP206		
Test reference	Test1	Test2	Test3
Pit depth (m)	3.05	2.85	
Pit width (m)	0.55	0.55	
Pit length (m)	1.80	1.80	
Depth to standing water (m)			

Test 1	
Time (min)	Depth (m)
0.0	2.28
2.0	2.29
4.0	2.30
6.0	2.32
8.0	2.32
10.0	2.33
15.0	2.35
20.0	2.38
50.0	2.40
60.0	2.45
100.0	2.49
137.0	2.53
207.0	2.60
237.0	2.69
1287.0	3.05

Test 2	
Time (min)	Depth (m)
0.0	1.91
2.0	1.92
4.0	1.93
10.0	1.96
15.0	1.98
20.0	1.99
30.0	2.04
45.0	2.06
60.0	2.09
90.0	2.15
120.0	2.18
180.0	2.28
263.0	2.35
390.0	2.46
420.0	2.49
950.0	2.62

Test 3	
Time (min)	Depth (m)



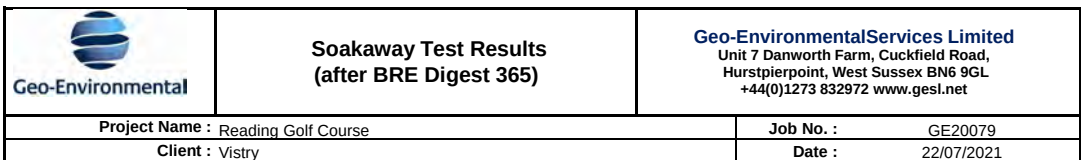
Max. depth (m)	3.05	2.85	0.00
Effective depth (m)	0.77	0.94	0.00
75% effective depth (m)	2.47	2.15	0.00
50% effective depth (m)	2.67	2.38	0.00
25% effective depth (m)	2.86	2.62	0.00
t75 (min)	75.00	90.00	
t50 (min)	210.00	300.00	
t25 (min)	900.00	950.00	
Vp 75-25	0.38	0.47	0.00
ap 50	2.7995	3.199	0
tp 75-25	825.00	860.00	0.00

Soil infiltration rate (m/s)	2.8E-06	2.8E-06	
Soil infiltration rate (mm/hr)	9.90E+00	1.01E+01	

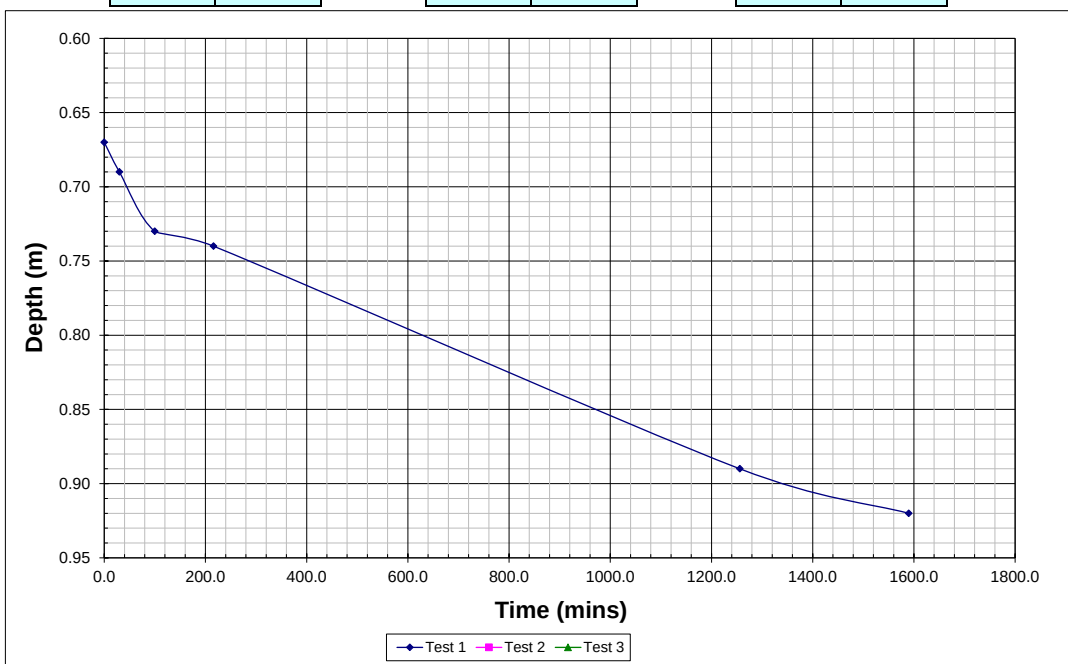
Notes:

- Blue cells require input data
- Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- First line of table must be depth at time = 0

- 1 Blue cells require input data
2 Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
3 First line of table must be depth at time = 0



Pit reference	TP208		
Test reference	Test1	Test2	Test3
Pit depth (m)	2.95		
Pit width (m)	0.50		
Pit length (m)	2.00		
Depth to standing water (m)			

[illegible][illegible][illegible]

Max. depth (m)	2.95	0.00	0.00
Effective depth (m)	2.28	0.00	0.00
75% effective depth (m)	1.24	0.00	0.00
50% effective depth (m)	1.81	0.00	0.00
25% effective depth (m)	2.38	0.00	0.00
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	1.14	0.00	0.00
ap 50	6.7	0	0
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water level	
Soil infiltration rate (mm/hr)	Insufficient fall in water level	

Notes:

- 1 Blue cells require input data
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