

# **Foul and Storm Water Drainage Strategy for Observer Park, Arborfield**

On behalf of:

Tungsten Dev Co 4 Limited

| <b>Date</b>  | <b>Issued</b>     | <b>Revision</b> |
|--------------|-------------------|-----------------|
| 6 June 2025  | Planning Issue    | A               |
| 30 July 2025 | Site Plan amended | B               |

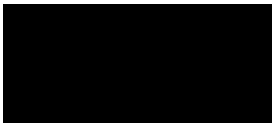
Reference: 64120-02

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Director

**EXECUTIVE SUMMARY**

This drainage strategy has been prepared on behalf of Tungsten Dev Co 4 Limited, in support of their planning application for the proposed development of a parcel of land situated off the Reading Road, Arborfield.

A sustainable drainage system (SuDS) scheme is proposed, incorporating permeable paving, catchpits, geocellular attenuation and an attenuation basin. The geocellular attenuation will provide sufficient storage for all storms up to and including the 1 in 100-year, plus 40% for climate change.

As per Lead Local Flood Authority (LLFA) guidance, for a 1 in 100-year storm (plus 40% climate change) the drainage installed on site will restrict discharge rates to the 1 in 1-year greenfield runoff rate (7.3l/s). The site is classified as a greenfield development, with an area of approximately 2.99ha. As the site is being developed on greenfield land the scheme will aim to make use of SuDS elements where reasonably possible in conjunction with discharge rates being sufficiently limited.

Due to the underlying strata and presence of groundwater, soakaways have been deemed not viable for this site.

It is proposed to discharge surface water flows into the watercourse adjacent to the eastern boundary of the site via two connections. The Thames Water (TW) asset map is shown in Appendix V. The connections will be subject to agreement from the LLFA (in absence of a local Internal Drainage Board, this will be Wokingham Borough Council). It is proposed to discharge at a maximum of the greenfield runoff rate of 7.3l/s for a 1 in 100-year storm event (plus 40% climate change).

To ensure the surface water drainage scheme remains effective, a maintenance plan is proposed. The key here is to prevent silt and other debris from entering the important SuDS features.

Considering all of the above, it can be seen that SuDS principles have been fully taken into account for the proposed surface water drainage system.

Foul drainage from the proposed development will indirectly connect into the existing TW foul water sewer, subject to TW approval.

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## **1. INTRODUCTION**

- 1.1 This drainage strategy has been prepared on behalf of Tungsten Dev Co 4 Limited in support of their planning application for the proposed site off Reading Road in Arborfield.
- 1.2 At the time of writing, the site consists of one access road and a large greenfield space.
- 1.3 The purpose of the report is to establish the best means of providing surface and foul water drainage to the new development, considering statutory requirements.

## **2. THE SCOPE OF THE ASSESSMENT**

- 2.1 The purpose of this strategy is to investigate and make recommendations as to the best way to deal with the discharge of foul and surface water drainage from the proposed development at the land situated off Reading Road, Arborfield.
- 2.2 To achieve the above, the following have been carried out:
  - Investigations into existing drainage systems at the site
  - Assessment of present and future surface water flows
  - Assessment of future foul water flows
  - Assessment of the permeability of the underlying geology
- 2.3 The following specific additional considerations will be applied to the surface water drainage design:
  - SuDS principles are to be adopted generally
  - Allowances for climate change are to be incorporated into the scheme
  - A surface water drainage layout and calculations are to be provided
  - A maintenance plan will be provided
- 2.4 The purpose of the above is to contain, as far as is reasonably practical, surface water drainage within the site and to not have an adverse effect on neighbouring properties during exceptional rainfall events.
- 2.5 A foul water drainage layout will be produced showing how the foul drainage will be discharged.

### 3. **EXISTING CONDITIONS AND THE LOCAL ENVIRONMENT**

- 3.1 The site's current land use at the time of writing is greenfield land and an access road.
- 3.2 The existing land use around the site is predominantly residential and industrial/commercial. The site is located at grid reference easting: 475018, northing: 167211. Levels are generally relatively flat where the commercial units are proposed, with levels along the proposed access road generally falling from south to north. Levels where units are proposed are generally around 49.100m AOD with levels to the end of the access road joining Reading Road being around 47.600m AOD.
- 3.3 The site has an area of approximately 2.99ha and is broadly rectangular in shape; a site plan is included in Appendix I.
- 3.4 The immediate surrounding land uses are:

| Boundary | Boundary Construction | Adjacent Land Use     | Proximal Land Use       |
|----------|-----------------------|-----------------------|-------------------------|
| North    | Fence                 | Commercial/Industrial | Highway (Reading Road)  |
| East     | Fence                 | Forest/Greenfield     | Residential/Agriculture |
| South    | Fence                 | Highway (A327)        | Agriculture             |
| West     | Fence                 | Highway (A327)        | Agriculture             |

### 4. **THE DEVELOPMENT PROPOSALS**

- 4.1 It is proposed to construct 7 commercial units, together with areas of hardstanding (yards, roads and car parking) and soft landscaping. A proposed site plan is appended.
- 4.2 The proposed development is classified as a less vulnerable development by the Flood Risk Vulnerability Classification (Annex 3) in the National Planning Policy Framework (NPPF). Therefore, in line with the flood risk vulnerability and flood zone compatibility table (table 3) in the NPPF, the development is appropriate on a flood zone 1 site.

**5. SITE INVESTIGATIONS**

- 5.1 A topographical survey of the existing development is shown in Appendix II.
- 5.2 Within the accuracy of the available geological information (British Geological Survey (BGS) Geology of Britain at a scale of 1:50,000) the 'solid' geology beneath the site is indicated to comprise the London Clay formation, described as slightly calcareous, silty to very silty clay. Superficial deposits beneath the site are said to be made up of river terrace deposits (with no description available on Geoindex).
- 5.3 Historical boreholes sunk within the vicinity of the site have recorded a topsoil underlain by river terrace deposits described as clayey sandy gravel to 2.5m below ground level over a layer of London Clay described as firm and grey to a depth of 3.8m before the borehole log is stopped. Given the confirmation of the presence of London Clay in the local vicinity, the soils beneath the site are anticipated to have a low permeability.
- 5.4 A geo-environmental assessment was carried out at the site in May 2024, and gives the ground conditions as made ground followed by river terrace deposits (both clays and sands) all underlain by London Clay. Groundwater was encountered within the river terrace deposits and further groundwater monitoring has been recommended. For further information with regards to borehole testing and groundwater, refer to Appendix VIII.
- 5.5 The site is located in Source Protection Zone 3, with approximately half of the access road (the northern half) lying within Source Protection Zone 2. The end of the access road joining Reading Road is approximately 400m away from Source Protection Zone 1.
- 5.6 Based on the underlying strata and the risk presented by groundwater, soakaways will not be viable, and BRE 365 testing would not be required to determine the feasibility of soakaways.

**6. FOUL WATER DRAINAGE SYSTEM**

- 6.1 A survey has been undertaken by Claydon on the private drainage that the proposed foul is to discharge into. This shows existing drainage that will serve the site and confirms that it connects to the TW sewer in Greensward Lane (hence the need for an indirect connection application).
- 6.2 TW asset plans confirm that there are no public foul water sewers within this proposed development. The proposed development will therefore require one foul drainage connection to the existing private drainage (with the relevant permissions), which means the existing TW foul sewer in Greensward Lane will indirectly serve the proposed site.

- 6.3 There are generally three methods for dealing with foul effluent that is produced from a commercial development:
- A) Public sewers – always the preferred option since they are relatively maintenance-free and require no additional area to discharge the foul water.
  - B) Septic tank – quite simply a tank, usually buried below ground, which collects the foul effluent and is periodically emptied; occasionally it also has a herringbone drainage system fitted for removing the ‘clean’ water that collects in the upper layers of the tank. These are seldom used in a commercial context as they require high levels of maintenance and can produce foul odours if not maintained correctly. A septic tank would be unsuitable for a development of this type for several reasons including lack of available space within a densely occupied area. The Environment Agency (EA) is also preventing the installation of new septic tanks and encouraging the installation of small treatment stations where other proposals are not suitable or not available.
  - C) A small treatment works – used where there is no public sewer within the vicinity, but only if the General Binding Rules for Small Sewage Discharges are met, or if a permit is obtained from the EA. Small treatment works discharge either to the ground or to surface water. Treatment works are seldom used where foul sewers are available for connections.
- 6.4 As stated above, method A will be used by connecting the foul water drainage into the existing private drainage and connecting to the TW foul water sewer in Greensward Lane by one indirect connection, subject to a S106 connection agreement. A pre-planning enquiry has been opened with regards to this connection (reference DS6098066) with TW having confirmed that they are to undertake upgrade works to serve the development. It is proposed that should reinforcement works not be completed by TW prior to the development, a cesspool is temporarily used. When the upgrade works are complete the foul water will be pumped from the cesspool.

## **7. SURFACE WATER DRAINAGE SYSTEM**

- 7.1 Per LLFA requirements the runoff rate of the development is restricted to the 1 in 1-year greenfield runoff rate with an impermeable area of 1.67ha having a restricted rate of 7.3L/s up to and including the 1 in 100 year with a 40% climate change allowance.
- 7.2 For the reasons outlined in section 5 of this report, soakaways are not viable for this site due to the underlying strata and presence of perched groundwater.

7.3 Government directives in the form of the Building Regulations Part H, Planning Practice Guidance and the GLA indicate that the following hierarchy should be adopted as a means of disposing of the surface water runoff:

- Rainwater re-use (rainwater harvesting/greywater recycling)
- Discharge rainwater into a soakaway
- Attenuate rainwater by storing it in tanks such as green roofs, blue roofs or below ground attenuation tanks and releasing it gradually over time into:
  - Nearby watercourses
  - Surface water sewers
  - Combined sewers

7.4 In accordance with The SuDS Manual, the design of the surface water system should consider water quantity, water quality, amenity and biodiversity and this report considers each category. An outline drainage strategy plan for the development is appended.

#### 7.5 Water Quantity

7.5.1 The quantity of surface water discharging will be controlled by a flow control device serving the network within the site limiting flow to a maximum of 4.6l/s which is to be agreed with the LLFA. This will be achieved by utilising geocellular storage. The greenfield runoff calculations are shown in Appendix VI.

7.5.2 The proposed point of discharge is into the watercourse adjacent to the eastern site boundary.

7.5.3 The following drainage principles have been applied: no surcharging is to be present in the 1 in 1 year (100% AEP) storm event; however, due to flow control restrictions, surcharging can be expected within the final pipe runs due to the restricted flow. No flooding is to occur in the 1 in 30-year (3.3% AEP) storm event. Flooding can occur for 1 in 100-year (1% AEP) storm event with climate change allowance of 40% but with with designed exit routes, however, in this case there is no flooding for this storm event anyway (see calculations in appendix VI).

7.5.4 There will be 1.67ha of positively drained area on the developed site. The drainage layout will be designed based on the critical event for a 1 in 100-year return period with a 40% allowance for climate change. Geocellular attenuation with a total storage volume of 864m<sup>3</sup> will be provided, as well as a pond and swale. Supporting calculations demonstrating discharge and storage can be found in Appendix VI.

7.5.5 The supporting calculations have been split up into two sets, the first being all units with their associated yards and parking as well as the adjacent proposed road (calculation set 1 - 1.49ha), and the second for the upper part of the road where the existing road arrangement is to be replaced (calculation set 2 - 0.18ha). The main site area where the units reside (represented on calculation set 1) has a final outfall rate of 5.3l/s. The upper portion of the access road (represented on calculation set 2) has a final outfall rate of 2l/s. With both areas combined the final rate coming off site will be 7.3l/s in line with greenfield runoff rate calculations.

## 7.6 Water Quality

7.6.1 Consideration is also given to water quality. SuDS techniques are discussed below. With reference to the architect's site layout drawings and table 4.3 of the SuDS Manual, the pollution hazard level is low for most of the site. Infiltration systems have been deemed not viable due to the nature of the underlying strata, as discussed in section 5 of this report.

7.6.2 It is proposed to construct the car parking spaces across the development with permeable block paving and a porous sub-base consisting of Open Graded Crushed Rock (OGCR) which provides 30% void space. Runoff from the car parking will drain via the permeable paving.

7.6.3 All yard areas will drain down via linear channel drainage which will then go through a full retention or bypass separator.

7.6.4 There is a medium potential hazard for pollutants from this site generated by the external yard areas; therefore, a bypass or full retention separator will be utilised to treat the runoff from service yards before entering the main system. The separators specified provide high level treatment which will reduce pollutants from all sources to a low risk.

7.6.5 The measures described above provides the level of treatment required as per the simple indexing method. A breakdown of this treatment train is as follows:

| Surface                         | Treatment 1      | Treatment 2 |
|---------------------------------|------------------|-------------|
| Yards                           | Separator        | Pond        |
| Parking                         | Permeable Paving | Pond        |
| Main Roof (excluding Units 5-6) | Separator        | Pond        |
| Main Access Road (Lower)        | Pond             |             |
| Main Access Road (Upper)        | Swale            |             |

7.6.6 A surface water quality assessment using the simple indexing method is appended; it should be noted that some roof space from units 5-6 does not enter a separator. It should also be noted that in Appendix IX the worst-case scenario has been considered for each surface based on the drainage layout when considering pollution indices. Unit 5-6 not entering a separator should not be an issue as the pond provides a sufficient level of treatment to the water prior to it being discharged into the watercourse.

## 7.7 Amenity and Biodiversity

7.7.1 Amenity is defined as “a useful or pleasant facility or service” in the SuDS Manual. The nature of commercial developments means the opportunity for providing amenity is low, however the soft landscaped areas and protected green spaces will offer some amenity and biodiversity.

## 7.8 Design Consideration of Exceedance

7.8.1 No flooding is expected to occur for a 1 in 100-year event plus 40% for climate change. It is also possible that exceedance of the surface water drainage system could occur during an exceptional rainfall event, that is with a return period of over 100 years, or in the event of a system failure. Should this occur, the water would back up into the drainage network's spare capacity.

7.8.2 The kerb lines and proposed levels on the site will ensure runoff from the units is retained within the site, and runoff from the roads is contained within the road area preventing flows onto neighbouring land and the public highway. Excess water will drain into the proposed system as the water level drops.

7.8.3 In the event of any drainage blockages occurring at the flow control devices (if required), the water will back up into the geocellular attenuation pipes and then pond within the yard areas. This ponding will signal that maintenance to or investigation of the drainage system is required.

7.8.4 The external levels will generally be set 50mm lower than the ground floor slab. Although level thresholds will be provided, levels will be designed to fall away from these locations. This will further reduce the propensity for any runoff to enter the buildings in the event of exceedance occurring.

7.8.5 Overland flows have been shown on the appended drainage strategy drawing. These flows will travel away from the units with external levels being designed to fall away. Flows then would be directed towards the proposed road before eventually making their way north and into the watercourse on site.

- 7.8.6 This means that overland flows will end up where they would have done anyway in the event exceedance occurs (which is unlikely due to no flooding being present in calculations up to and including the 1 in 100-year storm event plus 40% climate change). Retaining exceedance flows within the site and maintaining the existing overland flow pathway will make sure that no additional risk to others in the surrounding areas is created because of this development.
- 7.8.7 The measures described above will be sufficient to provide time for employees and residents to exit the buildings in the event of an abnormal flood occurring.

## **8. MAINTENANCE OF THE SURFACE WATER DRAINAGE SYSTEM**

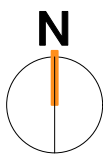
- 8.1 The surface water drainage system has been designed with future maintenance in mind. Catchpits will trap most of the silt to prevent entry into the attenuation systems.
- 8.2 A maintenance and management plan has been proposed and is appended. The measures are suggestions, and the frequency of maintenance should be adjusted as necessary to suit levels of silt build-up and defects in the system. The plan will be included in the Operation and Maintenance manual for future reference.
- 8.3 A maintenance plan for the bypass separator is included in Appendix VIII.

## **9. CONCLUSIONS**

- 9.1 The development utilises a SuDS-compliant design in accordance with the NPPF, GLA, and Wokingham Borough Council requirements.
- 9.2 Water quality improvements can be achieved across the development with the use of permeable paving, catchpits and gulleys/channel drainage with adequate silt traps, sumps, and bypass separators.
- 9.3 Surface water from the development will be restricted to a total of 4.6l/s for all storm events up to and including the 1 in 100 year (1% AEP) with a 40% climate change allowance per LLFA requirements.
- 9.4 Provided the recommendations of this report are retained during the detailed design of the development's drainage system, the development should be allowed to proceed.

**APPENDIX I**

**PROPOSED SITE LAYOUT**



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DO NOT SCALE!  
ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE WORK COMMENCES

| SITE LAYOUT KEY |                          |
|-----------------|--------------------------|
|                 | Boundary Line            |
|                 | Cycle Path               |
|                 | Access From A327         |
|                 | Existing Footpath (FP22) |
|                 | A327 road adjacent       |
|                 | Proposed Pathways        |
|                 | Mezzanine level          |
|                 | Covered bicycle parking  |
|                 | Bin store                |
|                 | Foul pumping station     |
|                 | Unit pedestrian entry    |
|                 | Unit vehicular entry     |
|                 | New tree planting        |

| Rev. | Date       | Description                                                                               | Drawn |
|------|------------|-------------------------------------------------------------------------------------------|-------|
| K    | 23/07/25   | Substation added for reserved matters.                                                    | LA    |
| J    | 01/07/25   | Unit floor plans coordinated with the site plan                                           | LA    |
| H    | 11/12/2024 | Unit 6 loading bays repositioned to coordinate with ADC tracking drawing                  | PH    |
| G    | 09/12/2024 | Hedge row to Western edge of Observer Way reinstated, coordinated with landscaping scheme | PH    |
| F    | 02/12/2024 | Existing trees adjacent entrance amended following discussion with planning consultant    | PH    |
| E    | 02/12/2024 | Updated to incorporate latest landscaping scheme received 29.11.24                        | PH    |
| D    | 02/12/2024 | Landscaping scheme amended to include specialist consultant information                   | DW    |

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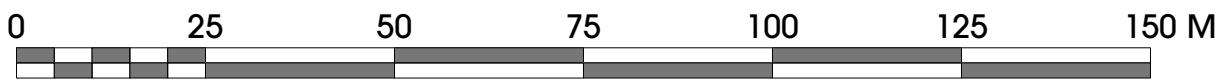
Client  
Tungsten Properties

Project  
Observer Park, Arborfield,  
Reading

Drawing Title  
Illustrative Masterplan

Date 20/08/2024  
Status PLANNING  
Scale 1:1000 Size A1  
Drawn PH Checked DW  
Job no. 3389 Dwg no. P403 Rev. K

- Pedestrian Crossing
- Highlighted Red elements to be removed / amended to facilitate new access road
- Pedestrian Crossing
- Existing ditch to be realigned / culverted to accommodate new access road
- Existing access road (with improvements)
- Pedestrian Crossing
- Attenuation basin
- Connection to cycle path
- Foul pump station
- Proposed native hedgerow and native tree planting. Refer to landscape proposals
- Red line indicates site boundary
- Existing cycle path
- Lorry loading bay
- Existing relief road strategic planting
- Enhanced soft landscaping zone
- Soft landscaped amenity (picninc) space

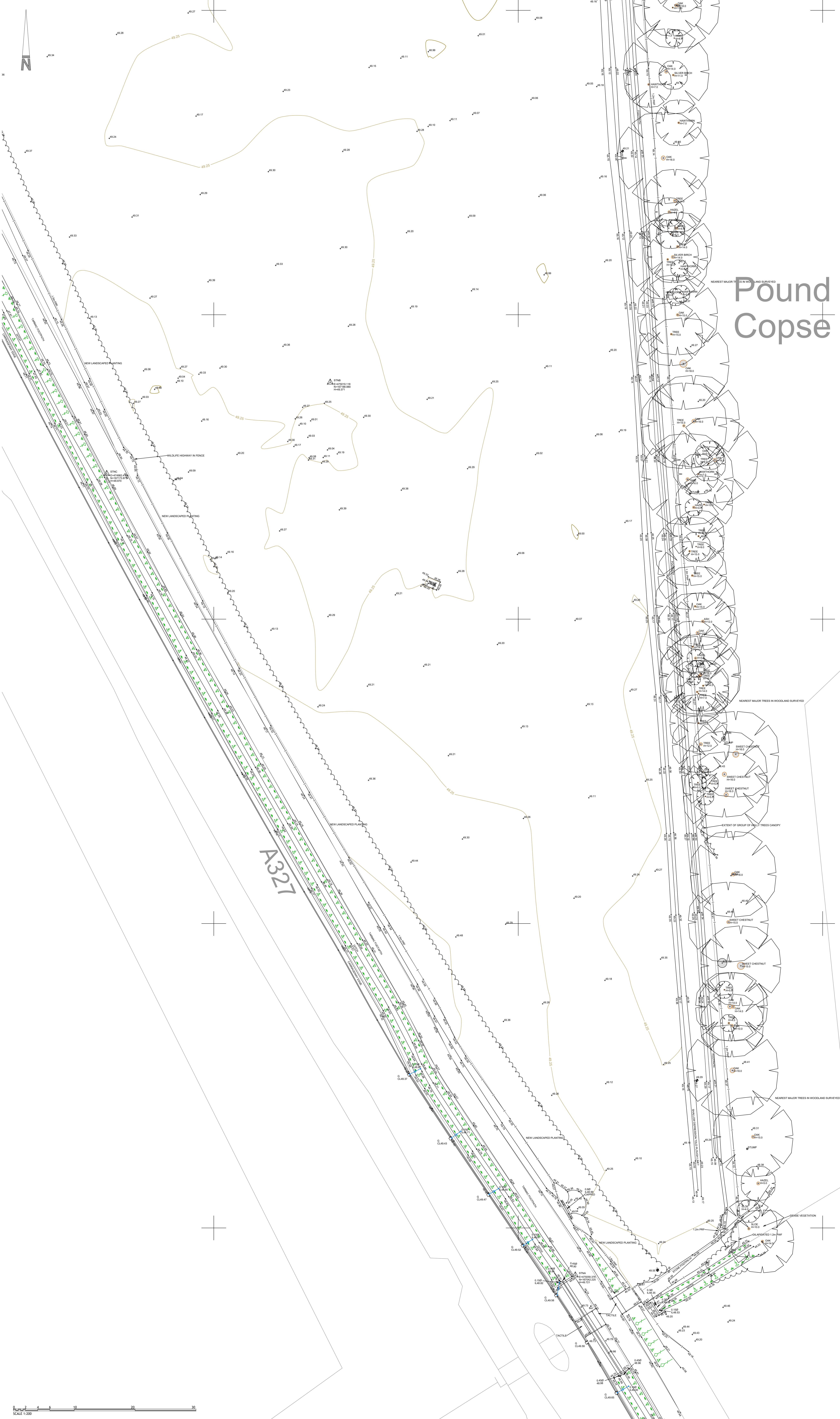


1 **Proposed Site Plan**  
Scale: 1:1000

- New link to existing footpath
- Building siting zones (x.xxm) denotes maximum ridge height above GFFL
- Development zone
- Proposed enhanced landscape zone
- Red hatch indicates tree protection zone
- Existing ancient woodland
- Existing footpath (FP22)

**APPENDIX II**

**TOPOGRAPHICAL SURVEY**  
**& UTILITIES SURVEY**



- NOTES
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**KEY**

**SURVEY STATION**

**BANKING**

**DITCH**

**HESSIE SPREADS**

**FEELAGE**

**TREES**

**GATE**

**ROAD WITH GULLY AND KEYS (LEFT)**

**BRIDGE KEYS**

**HAZEL**

**SPOT LEVEL**

**SEVER SCALE**

**SEVER FID**

**SEVER STOM**

**COVER LEVEL**

**INVERT LEVEL**

**BACKDROP INVERT**

**SPURWAY**

**CATCHPIT INVERT**

**SOFFIT LEVEL**

**GENERAL ABBREVIATIONS**

**FENCE ABBREVIATIONS**

**WALL ABBREVIATIONS**

**ORDNATE SYSTEM**

**GRID AND UTM TO OS GPS NETWORK**

**SCALE FACTOR = 1.000**

CONTROL TABLE LINKED TO NATIONAL GPS NETWORK OF 1000

| Name | Easting   | Northing   | Height |
|------|-----------|------------|--------|
| STNA | 47060.370 | 107562.220 | 40.771 |
| STND | 47060.110 | 107560.800 | 40.971 |
| STNC | 47060.430 | 107510.870 | 40.893 |
| STNE | 47060.850 | 107480.040 | 42.600 |
| STNF | 47060.170 | 107502.020 | 40.152 |
| STNG | 47060.800 | 107407.027 | 47.915 |
| STNH | 47060.860 | 107501.700 | 47.680 |
| STNI | 47060.200 | 107500.000 | 47.025 |
| STNM | 47060.200 | 107500.000 | 47.025 |
| STNA | 47060.720 | 107507.600 | 45.027 |
| STND | 47060.170 | 107500.000 | 47.025 |
| STNC | 47060.490 | 107500.000 | 47.027 |

|     |              |     |     |      |
|-----|--------------|-----|-----|------|
| REV | DESCRIPTION  | DRN | CHD | DATE |
| 1   | PRELIMINARY  |     |     |      |
| 2   | CONSTRUCTION |     |     |      |

SCALE: 1:200 @ A0

DRAWN: NC

DRAWING NO.: 18959-7-851

TITLE: LAND OFF READING ROAD ARBORFIELD

DETAILS: TOPOGRAPHIC SURVEY SHEET 1 of 6

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**KEY**

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**ROAD WITH GULLY AND KEYS (LEFT)**

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**KERB**

**TRACK**

**VEGSE**

**FENCE**

**WALL**

**DVERHEAD ELECTRIC**

**DVERHEAD TELECOM**

**BUILDING**

**MAJOR**

**CONTOUR INTERVAL**

**MOOR**

**CONTOUR INTERVAL**

**SPOT LEVEL**

**SPICE HOLE**

**TRIAL PIT**

**SEVER FID**

**SEVER STOM**

**COVER LEVEL**

**INVERT LEVEL**

**BACKDROP INVERT**

**SPURWAY**

**CATCHMENT INVERT**

**SOFFIT LEVEL**

**GENERAL ABBREVIATIONS**

**FENCE ABBREVIATIONS**

**WALL ABBREVIATIONS**

**ORDNATE SYSTEM**

CONTROL TABLE LINKS TO NATIONAL GPS NETWORK OF 1:200

| Name | Easting   | Northing   | Height |
|------|-----------|------------|--------|
| STNA | 47060.370 | 107562.220 | 48.771 |
| STND | 47070.110 | 107166.890 | 48.071 |
| STNE | 47060.410 | 107110.870 | 48.080 |
| STNG | 47060.800 | 107110.870 | 48.080 |
| STNH | 47060.800 | 107110.870 | 48.080 |
| STNI | 47060.800 | 107110.870 | 48.080 |
| STNJ | 47060.800 | 107110.870 | 48.080 |
| STNK | 47060.800 | 107110.870 | 48.080 |
| STNL | 47060.800 | 107110.870 | 48.080 |
| STNM | 47060.800 | 107110.870 | 48.080 |
| STNO | 47060.800 | 107110.870 | 48.080 |
| STNP | 47060.800 | 107110.870 | 48.080 |
| STNQ | 47060.800 | 107110.870 | 48.080 |
| STNR | 47060.800 | 107110.870 | 48.080 |
| STNS | 47060.800 | 107110.870 | 48.080 |
| STNT | 47060.800 | 107110.870 | 48.080 |
| STNV | 47060.800 | 107110.870 | 48.080 |
| STNW | 47060.800 | 107110.870 | 48.080 |
| STNX | 47060.800 | 107110.870 | 48.080 |
| STNY | 47060.800 | 107110.870 | 48.080 |
| STNZ | 47060.800 | 107110.870 | 48.080 |
| STNA | 47060.800 | 107110.870 | 48.080 |
| STND | 47060.800 | 107110.870 | 48.080 |
| STNE | 47060.800 | 107110.870 | 48.080 |
| STNG | 47060.800 | 107110.870 | 48.080 |
| STNH | 47060.800 | 107110.870 | 48.080 |
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| STNJ | 47060.800 | 107110.870 | 48.080 |
| STNK | 47060.800 | 107110.870 | 48.080 |
| STNL | 47060.800 | 107110.870 | 48.080 |
| STNM | 47060.800 | 107110.870 | 48.080 |
| STNO | 47060.800 | 107110.870 | 48.080 |
| STNP | 47060.800 | 107110.870 | 48.080 |
| STNQ | 47060.800 | 107110.870 | 48.080 |
| STNR | 47060.800 | 107110.870 | 48.080 |
| STNS | 47060.800 | 107110.870 | 48.080 |
| STNT | 47060.800 | 107110.870 | 48.080 |
| STNV | 47060.800 | 107110.870 | 48.080 |
| STNW | 47060.800 | 107110.870 | 48.080 |
| STNX | 47060.800 | 107110.870 | 48.080 |
| STNY | 47060.800 | 107110.870 | 48.080 |
| STNZ | 47060.800 | 107110.870 | 48.080 |

REV DESCRIPTION DRN CHD DATE

☒ PRELIMINARY ☐ INFORMATION ☐ TENDER

☒ CONSTRUCTION ☐ AS BUILT

SCALE 1:200 @ A0 DATE APRIL 2022

DRAWN NC CHK NC

DRAWING NO. 18959-7-852 REV -

TITLE LAND OFF READING ROAD ARBORFIELD

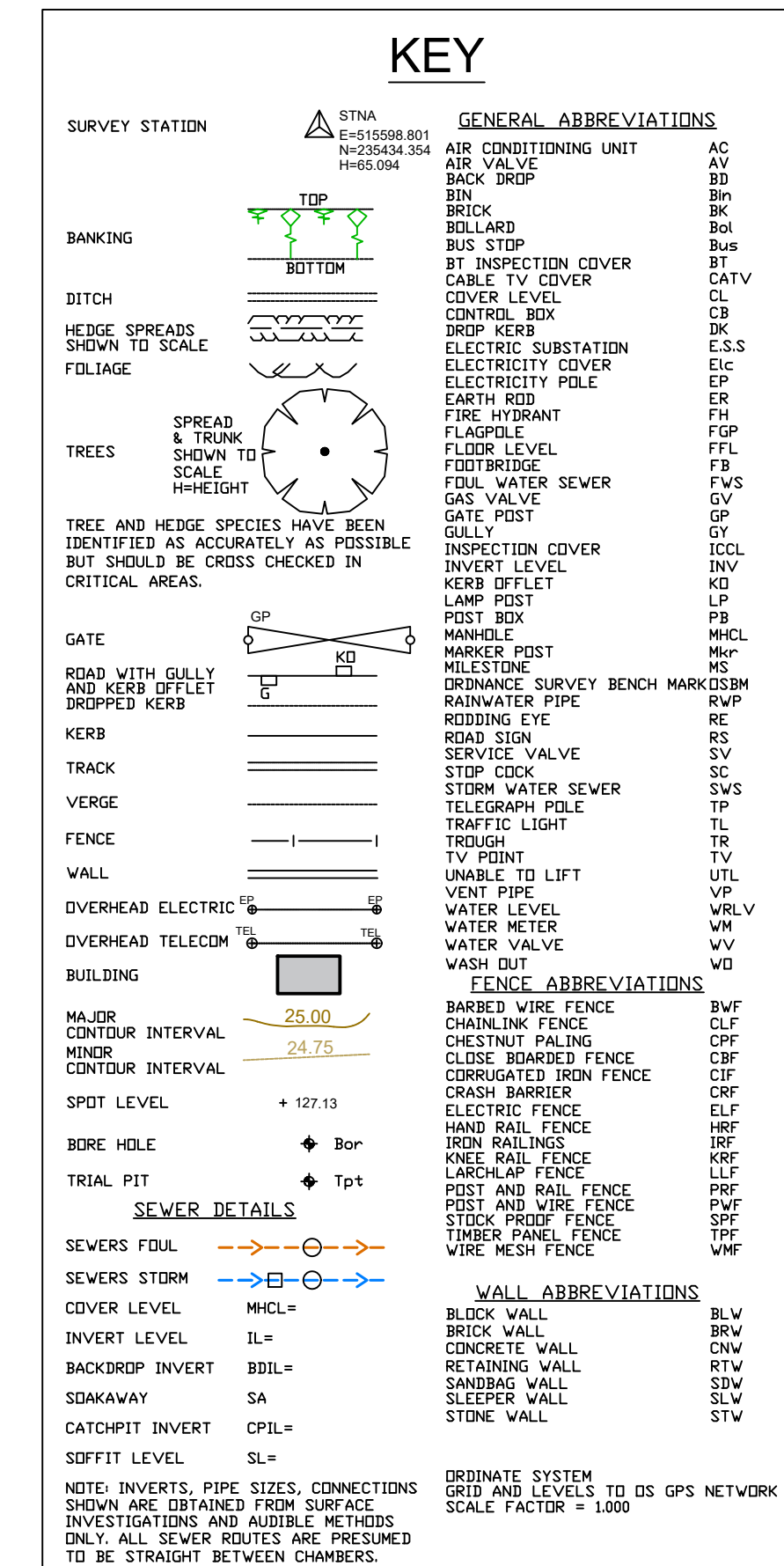
DETAILS TOPOGRAPHIC SURVEY SHEET 2 of 6

**Woods Hardwick**  
Architecture | Engineering | Planning | Surveying

**BEDFORD : HEAD OFFICE**  
15-17 Goldington Road  
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**BIRMINGHAM**  
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Birmingham B24 9FE  
T: +44 (0) 121 6297784  
woods-hardwick.com

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING



| Name | Easting    | Northing   | Height |
|------|------------|------------|--------|
| STHA | 475059.376 | 507042.225 | 48.722 |
| STHB | 475016.118 | 507188.880 | 48.376 |
| STHC | 474882.410 | 507173.875 | 48.375 |
| STHD | 474847.700 | 507137.372 | 48.375 |
| STHE | 474806.804 | 507148.945 | 47.855 |
| STHF | 474820.173 | 507148.945 | 47.855 |
| STHG | 474809.436 | 507147.881 | 47.710 |
| STHH | 474852.805 | 507146.597 | 47.710 |
| STHI | 474813.460 | 507146.597 | 47.623 |
| STHK | 474826.259 | 507130.464 | 47.529 |
| STHL | 474844.205 | 507150.009 | 47.529 |
| STHM | 474855.721 | 507149.999 | 47.491 |
| STHN | 474865.749 | 507231.594 | 46.329 |
| STHO | 474868.177 | 507231.594 | 46.329 |
| STHQ | 474951.495 | 507145.236 | 47.623 |

| REV                                             | DESCRIPTION                          | DRN                             | CHD | DATE |
|-------------------------------------------------|--------------------------------------|---------------------------------|-----|------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> INFORMATION | <input type="checkbox"/> TENDER |     |      |
| <input type="checkbox"/> CONSTRUCTION           | <input type="checkbox"/> AS BUILT    |                                 |     |      |

SCALE 1:200 @ A0 DATE APRIL 2021

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DRAWING NO. 18959-7-853

TITLE LAND OFF READING ROAD  
ARBORFIELD

DETAILS TOPOGRAPHIC SURVEY  
SHEET 3 of 6

 **Woods Hardwick**  
Architecture | Engineering | Planning | Surveying

|                                                                                                                                       |                           |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>BEDFORD : HEAD OFFICE</b>                                                                                                          | <b>BIRMINGHAM</b>         |
| 15-17 Goldington Road                                                                                                                 | Fort Dunlop, Fort Parkway |
| Bedford MK40 3NH                                                                                                                      | Birmingham B24 9FE        |
| T: +44 (0) 1234 268862                                                                                                                | T: +44 (0) 121 6297784    |
| ONLINE: <a href="mailto:mail@woodshardwick.com">mail@woodshardwick.com</a>   <a href="http://woodshardwick.com">woodshardwick.com</a> |                           |

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING

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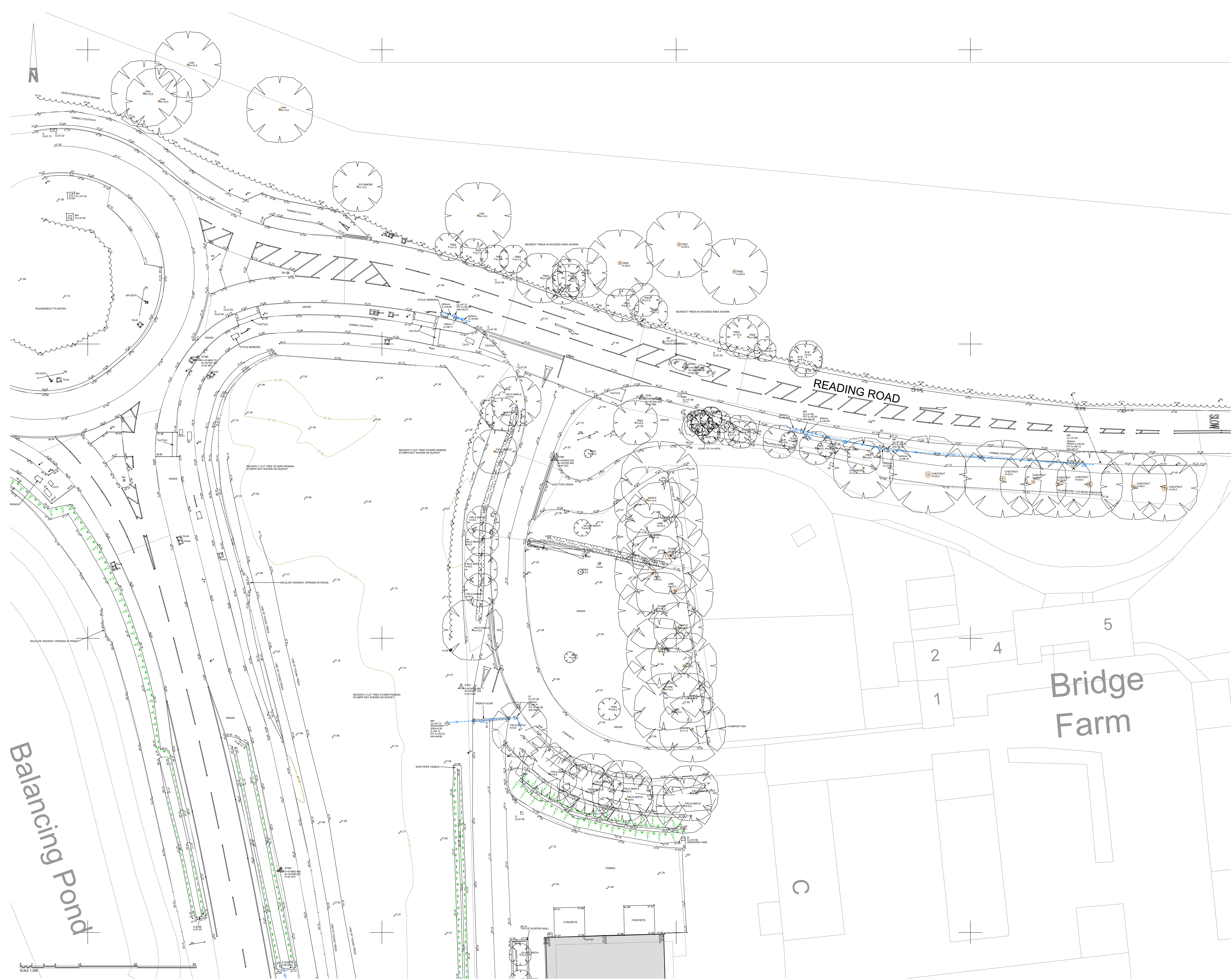
| Name | Easting    | Northing   | Height |
|------|------------|------------|--------|
| STNA | 475599.376 | 957042.225 | 43.00  |
| STNB | 475610.118 | 957168.890 | 43.00  |
| STNC | 47602.415  | 957173.073 | 43.00  |
| STND | 47647.760  | 957242.732 | 43.00  |
| STNE | 47606.804  | 957346.945 | 43.00  |
| STNF | 47620.173  | 957451.981 | 43.00  |
| STNG | 47600.438  | 957471.787 | 43.00  |
| STNH | 47602.895  | 957460.537 | 43.00  |
| STNJ | 47613.465  | 957467.703 | 43.00  |
| STNK | 47609.259  | 957464.984 | 43.00  |
| STNL | 47604.203  | 957540.000 | 43.00  |
| STNM | 47608.721  | 957547.621 | 43.00  |
| STNN | 47605.798  | 957571.594 | 43.00  |
| STNO | 47608.177  | 957581.028 | 43.00  |
| STNQ | 47601.493  | 957546.396 | 43.00  |

| REV                                 | DESCRIPTION                         | DRN                      | CHD         | DATE                     |        |
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| <input checked="" type="checkbox"/> | PRELIMINARY                         | <input type="checkbox"/> | INFORMATION | <input type="checkbox"/> | TENDER |
| <input type="checkbox"/>            | CONSTRUCTION                        | <input type="checkbox"/> | AS BUILT    |                          |        |
| SCALE                               | 1:200 @ A0                          | DATE                     | APRIL 2022  |                          |        |
| DRAWN                               | NC                                  | CHK                      | NC          |                          |        |
| DRAWING NO.                         | 18959-7-854                         | REV                      | -           |                          |        |
| TITLE                               | LAND OFF READING ROAD<br>ARBORFIELD |                          |             |                          |        |
| DETAILS                             | TOPOGRAPHIC SURVEY<br>SHEET 4 of 6  |                          |             |                          |        |

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|----------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>BEDFORD : HEAD OFFICE</b>                                               | <b>BIRMINGHAM</b>                                                |
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- NOTES
- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding.  
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### KEY

**GENERAL ABBREVIATIONS**

|                                        |    |                                        |                                        |    |
|----------------------------------------|----|----------------------------------------|----------------------------------------|----|
| SURVEY STATION                         | AS | ASB                                    | CONSIDERING UNIT                       | AC |
| BANKING                                | BT | BACK                                   | BACK                                   | BA |
| DITCH                                  | DI | DITCH                                  | DITCH                                  | DI |
| WIDE VERGE                             | WV | WIDE VERGE                             | WIDE VERGE                             | WV |
| SHOWN TO SCALE                         | SS | SHOWN TO SCALE                         | SHOWN TO SCALE                         | SS |
| FOUR                                   | FO | FOUR                                   | FOUR                                   | FO |
| TREES                                  | TR | TREES                                  | TREES                                  | TR |
| GATE                                   | GA | GATE                                   | GATE                                   | GA |
| ROAD WITH DITCH                        | RD | ROAD WITH DITCH                        | ROAD WITH DITCH                        | RD |
| AND ROAD OFFSET                        | RO | AND ROAD OFFSET                        | AND ROAD OFFSET                        | RO |
| DROPPED KERB                           | DK | DROPPED KERB                           | DROPPED KERB                           | DK |
| KERB                                   | KR | KERB                                   | KERB                                   | KR |
| TRACK                                  | TR | TRACK                                  | TRACK                                  | TR |
| VERGE                                  | VR | VERGE                                  | VERGE                                  | VR |
| FENCE                                  | FE | FENCE                                  | FENCE                                  | FE |
| WALL                                   | WA | WALL                                   | WALL                                   | WA |
| OVERHEAD ELECTRIC                      | OE | OVERHEAD ELECTRIC                      | OVERHEAD ELECTRIC                      | OE |
| OVERHEAD TELECOM                       | OT | OVERHEAD TELECOM                       | OVERHEAD TELECOM                       | OT |
| BUILDING                               | BU | BUILDING                               | BUILDING                               | BU |
| MAJOR                                  | MA | MAJOR                                  | MAJOR                                  | MA |
| CONTINUED INTERVAL                     | CI | CONTINUED INTERVAL                     | CONTINUED INTERVAL                     | CI |
| MINOR                                  | MI | MINOR                                  | MINOR                                  | MI |
| CONTINUED INTERVAL                     | CI | CONTINUED INTERVAL                     | CONTINUED INTERVAL                     | CI |
| SPOT LEVEL                             | SL | SPOT LEVEL                             | SPOT LEVEL                             | SL |
| BONE HOLE                              | BH | BONE HOLE                              | BONE HOLE                              | BH |
| TRIAL PIT                              | TP | TRIAL PIT                              | TRIAL PIT                              | TP |
| SEWERS FOL                             | SE | SEWERS FOL                             | SEWERS FOL                             | SE |
| SEWERS STDM                            | SS | SEWERS STDM                            | SEWERS STDM                            | SS |
| COVER LEVEL                            | CL | COVER LEVEL                            | COVER LEVEL                            | CL |
| INVERT LEVEL                           | IL | INVERT LEVEL                           | INVERT LEVEL                           | IL |
| BACKDROP INVERT                        | BI | BACKDROP INVERT                        | BACKDROP INVERT                        | BI |
| BOIL                                   | BO | BOIL                                   | BOIL                                   | BO |
| SKANWAY                                | SK | SKANWAY                                | SKANWAY                                | SK |
| CATCHMENT INVERT                       | CI | CATCHMENT INVERT                       | CATCHMENT INVERT                       | CI |
| SOFTIT LEVEL                           | SL | SOFTIT LEVEL                           | SOFTIT LEVEL                           | SL |
| NOTE: INVERTS, PIPE SIZES, CONNECTIONS |    | NOTE: INVERTS, PIPE SIZES, CONNECTIONS | NOTE: INVERTS, PIPE SIZES, CONNECTIONS |    |
| SHOWN ARE OBTAINED FROM SURFACE        |    | SHOWN ARE OBTAINED FROM SURFACE        | SHOWN ARE OBTAINED FROM SURFACE        |    |
| INVESTIGATIONS AND ADJUSTMENTS         |    | INVESTIGATIONS AND ADJUSTMENTS         | INVESTIGATIONS AND ADJUSTMENTS         |    |
| ONLY ALL SEWER ROUTES ARE PRESUMED     |    | ONLY ALL SEWER ROUTES ARE PRESUMED     | ONLY ALL SEWER ROUTES ARE PRESUMED     |    |
| TO BE TRANSPARENT BETWEEN CHAMBERS     |    | TO BE TRANSPARENT BETWEEN CHAMBERS     | TO BE TRANSPARENT BETWEEN CHAMBERS     |    |

**FENCE ABBREVIATIONS**

|                     |     |
|---------------------|-----|
| BARBED WIRE FENCE   | BWF |
| CHAINLINK FENCE     | CLF |
| CHESTNUT FENCE      | CHF |
| CLOSE BARBED FENCE  | CBF |
| COMMON RAIL FENCE   | CRF |
| ELECTRIC FENCE      | ELF |
| IRON RAIL FENCE     | IRF |
| POST AND RAIL FENCE | PRF |
| STEEL RAIL FENCE    | SRF |
| THORN FENCE         | TF  |
| WIRE MESH FENCE     | WMF |

**WALL ABBREVIATIONS**

|                |     |
|----------------|-----|
| BLOCK WALL     | BW  |
| BRICK WALL     | BRW |
| CONCRETE WALL  | CW  |
| RETAINING WALL | RW  |
| SLEEPER WALL   | SW  |
| STONE WALL     | STW |

**SEWER DETAILS**

|                  |    |
|------------------|----|
| SEWERS FOL       | SE |
| SEWERS STDM      | SS |
| COVER LEVEL      | CL |
| INVERT LEVEL     | IL |
| BACKDROP INVERT  | BI |
| BOIL             | BO |
| SKANWAY          | SK |
| CATCHMENT INVERT | CI |
| SOFTIT LEVEL     | SL |

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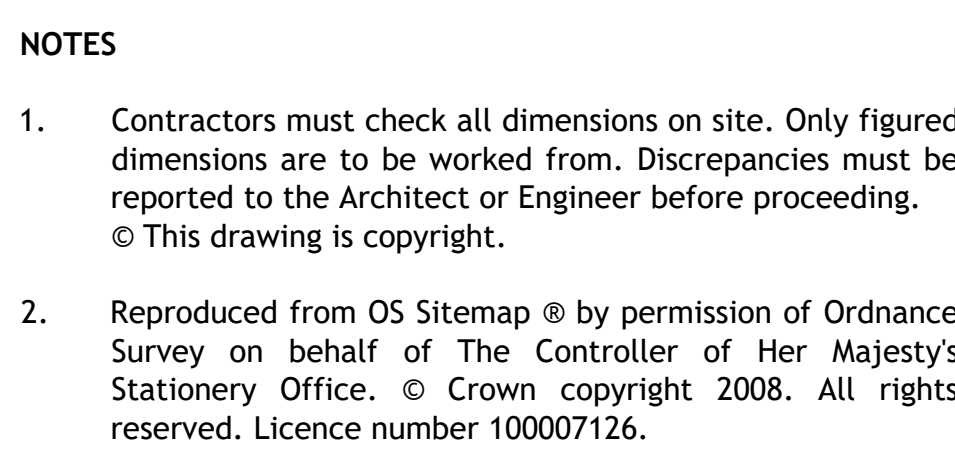
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| STNB                                                  | 475018.118 | 957188.880 | 48.371 |
| STNC                                                  | 476002.415 | 957173.372 | 48.372 |
| STND                                                  | 476047.765 | 957240.315 | 48.403 |
| STNE                                                  | 476054.804 | 957260.357 | 47.955 |
| STNF                                                  | 476020.173 | 957262.291 | 48.130 |
| STNG                                                  | 476009.436 | 957141.987 | 47.756 |
| STNH                                                  | 476002.415 | 956400.997 | 47.815 |
| STNI                                                  | 476002.415 | 956400.997 | 47.829 |
| STNJ                                                  | 476006.259 | 957050.654 | 47.523 |
| STNL                                                  | 476344.205 | 957040.909 | 47.964 |
| STNM                                                  | 476086.721 | 957247.691 | 47.907 |
| STNO                                                  | 476065.798 | 957271.594 | 48.611 |
| STNP                                                  | 476058.177 | 957464.326 | 47.527 |
| STNQ                                                  | 476091.495 | 957464.326 | 47.097 |

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| SCALE                               | 1:500 @ A0                                       | DATE                     | APRIL 2022  |                          |        |
| DRAWN                               | NC                                               | CHK                      | NC          |                          |        |
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| TITLE                               | LAND OFF READING ROAD<br>ARBORFIELD              |                          |             |                          |        |
| DETAILS                             | TOPOGRAPHIC SURVEY<br>SHEET 6 of 6 (TEXT @1-200) |                          |             |                          |        |

**APPENDIX III**

**GROUND INVESTIGATION INFORMATION**

## **Phase II & Geotechnical Ground Investigation Report**

**for  
Proposed Commercial Development**

**at  
Observer Park, Arborfield  
Reading**

On behalf of:

**Angle Property (Arborfield) LLP**  
**c/o Carbide Properties Ltd**  
Gateway House  
4 Penman Way  
Grove Park  
Enderby  
Leicester  
LE19 1SY

|                   |            |
|-------------------|------------|
| Report Reference: | R 64065-03 |
| Revision          |            |
| Issue:            | Final      |
| Date              | 7 May 2024 |

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Please note that all the above contents are actively linked to the appropriate section within this report.

## 1 INTRODUCTION

This Ground Investigation Report (GIR) was instructed by the Client, Carbide Properties Ltd, by email, dated 13/03/2024, on behalf of Angle Property (Arborfield) LLP, and has been prepared by PRP, Consulting Engineers. The subject of this report is the land to the south of Bridge Farm, situated between the A327 and Greensward Lane, to the west of Arborfield, and throughout this report this area will be referred to as the “Site”, differentiating it from other sites.

### 1.1. Proposed Development

The proposed development comprises the construction of a number of commercial units, along with associated enabling groundworks, access point, hardstanding areas, and utility infrastructure. At the time of writing this report, the proposed development is as outlined on the HTC Architect’s drawing *Proposed Site Plan*, reference 3389 F401 A, dated 14/02/2024, which is presented in [Appendix A](#).

The general layout may be subject to minor changes throughout the planning, design and development process. As ground investigations are considered pre-works and this report assesses the potential ground conditions at the Site, any minor changes to the development layout for the same end-use will not alter the findings of this report and will therefore not require any amendment to and reissue thereof unless a fundamental change of end-use category is enacted.

With respect to the proposed development, the Site should be assessed in the context of the ‘commercial’ end-use risk assessment criteria outlined by the LQM CIEH S4UL (suitable for use limits) and Defra C4SL (category 4 screening levels).

### 1.2. Summary and Clarification of Brief

The scope for the on-site intrusive investigation was outlined by emailed letter, reference KLH/E14164-02, dated 29/02/2024. Please refer to [Section 3.1](#) for any restrictions particular to this Site; general reporting limitations are outlined below in [Section 1.4](#).

In accordance with the Client’s specific objectives and requirements, the purpose of the ground investigation is to:

- assess the physical characteristics of the underlying strata to inform tender submissions and earthworks design, foundations and floor slabs design, and to advise on potential exceptional or geotechnically difficult ground conditions that may have an influence on the development as far as is reasonably possible.
- assess and confirm the chemical condition of the underlying strata, as highlighted by the pQRA referenced below in [Section 2.1](#) and in line with current guidance and legislation, as indicated in [Section 1.3](#), pertaining to the potential for exposure to contamination and consequential impact on human health and the wider environment, both during the development stages and on completion of the works.
- provide a Stage I, Tier 2 generic quantitative risk assessment (GQRA) for contaminated land and briefly outline any further targeted investigation requirement, should it be deemed necessary.

- include, where appropriate and able, a Stage 1, Tier 3 (detailed) site-specific assessment criterion (SSAC) where a generic assessment criterion has been exceeded, thus superseding the GQRA for that or those particular substances in accordance with the current guidance.
- provide a summary of requirements to be considered in the design of any mitigation or remedial measures, where necessary and appropriate to the proposed development scheme.

### 1.3. Terms of Reference

This GIR includes a Phase II quantitative assessment for land contamination and constitutes a Stage 1, Tier 2 risk assessment, as defined by UK LCRM guidance 2022, and is in general accordance with PRP's terms listed in [Appendix G](#) with reference to the guidance listed in [Appendix H](#).

Where appropriate it also takes account of the requirements of the National Planning Policy Framework (NPPF) and has been written to ensure that the Client complies with their obligations under the current UK contaminated land legislative regime.

However, acceptance of this report must be gained from the Local Planning Authority before any commencement of works on the Site as defined by the planning conditions issued by the Regulatory Planning Authority.

### 1.4. General Limitations of Reporting

PRP do not undertake surveys of flora or fauna. Any such surveys should be undertaken by specifically qualified professionals, these include, but are not restricted to, ecology, invasive plant species, and arboriculture.

PRP do not consider or assess the archaeological potential of soils beneath the Site.

PRP are not UXO specialists and do not undertake any research or investigations pertaining to the presence of explosives or any other military associated hardware.

This report should also be read in conjunction with the information, advice and reports obtained from the sources listed in [Section 2](#). Aspects of this report may include an assessment of data previously reported on, as referenced in [Section 2.1](#). Responsibility for permission to rely on such data is with the Client. PRP are not responsible for the validity of third-party data, and assume all to be an accurate reflection of the Site conditions.

An assessment of flood potential or drainage capacity at the Site is beyond the scope of this report. For a full assessment of site-specific potential for flooding and drainage, a flood risk and drainage strategy report should be undertaken, which may be informed by, and include data that was recovered during the ground investigation presented within this and other ground investigation reports. PRP do offer this service if required.

A structural survey of any existing buildings or structures that may be, or have previously been, present at the Site, or an assessment of asbestos containing materials (ACM) is beyond the scope of this report and, if appropriate to the Site, should be considered separately and undertaken by appropriate personnel. PRP do offer these services if required.

## 2 SUMMARY OF INFORMATION

### 2.1. Previous Reports

Although it was clear from the Site reconnaissance survey that an intrusive investigation has been undertaken since the area was used as a construction compound, no resultant report was forwarded to PRP for assessment to aid the design of the ground investigation.

To date, the following reports relating to the in-ground environment at the Site and immediately surrounding area have been produced by or submitted to PRP for assessment:

- *Phase I (pQRA) Desk Study Report*, reference 64065-01, dated 08/04/2024, produced by PRP.

### 2.2. Review of Phase I Report

#### 2.2.1. Preliminary Contamination Assessment

The Site is undeveloped former woodland; later cleared for arable use. With the construction of the adjacent (west) A327 Observer Way, the Site was used as the construction compound thus indicating potential for Made Ground near to surface. The historical maps indicate cleared land (non-wooded) nearby was known to be marshy ground, which is borne out by the coverage of marshland grasses now prolific across the Site.

A substantial amount of material has been tipped within the Site along the northern boundary. Whilst this is likely the arisings of the Topsoil scrape for the A327 development, there is clearly other material mixed within, including demolition debris. This may be inert waste, however, there do not appear to be any recorded licenses for this material albeit that the works contractor and local authority should have the appropriate documentation; without access to this or previous ground investigation information, inert and uncontaminated arisings cannot be assumed. With the RTD being classified as minor (secondary A) aquifer and the Site being within a Zone 2 GSPZ, potential vulnerability to this source must be considered.

Other than that outlined above, there is little apparent on the Site that would be considered a source of contamination, either current or historical, that might present a significant risk of significant harm to the receptors.

Ground gas impact is unlikely due to a lack of source, with the underlying strata not predisposed to producing an adequately impacting quantity that would be detrimental to human health, therefore ground gas is not considered to present any significant risk of significant harm to the Site receptors and ground gas monitoring is not considered necessary.

As part of the preparatory works, Topsoil will be removed from the development areas exposing the bare earth, which may cause fugitive dust, particularly during dry periods, which although unlikely to be chemically toxic, can still impact the human respiratory system as well as being a nuisance to the adjacent road users and local businesses and residents.

Beyond the Site, there are no historical activities or land uses that raise concern for in-ground contamination. Whilst the impact from vehicles using the adjacent A327 may impact the Site through accidents, the risk of such an event is considered very low.

Based on our assessment of the available data and inspection of the local area, there is little presence of any visible above-ground or viable in-ground contamination sources that would impact the Site or present significant risk of significant harm to environmental, building and human receptors.

### **2.2.2. Preliminary Geotechnical Assessment**

With consideration of the underlying natural geology, desk research indicates the need for ground improvement would be unlikely, however, confirmation of this would result from a ground investigation.

Made Ground beyond 1m bgl is not anticipated at the Site; it is assumed that the tipped materials in the north of the Site will be removed prior to development. Assessment of Made Ground would form part of a Phase II ground investigation.

According to the desktop data reviewed, the Site has not been developed, and therefore, no associated in-ground structures (foundations) are anticipated.

According to the BGS data, the underlying stratum across the Site is London Clay, however, in the northwest corner, this is likely to be overlain with River Terrace Deposits.

The use of superficial soakaway pits will likely not be viable at this Site due to the previous indications of marshland and underlying impermeable stratum. The historical removal of Pound Copse from across the Site has undoubtedly resulted in a diminished natural dewatering afforded by the presence of trees, therefore the Site was always likely to transition to marshy ground. This is evident from the number of semi-permanent water-logged areas; the proliferation of marsh grasses indicates this to be a regular occurrence. The underlying London Clay is all but impermeable thus any surface water has nowhere to dissipate apart from by evaporation or very slow infiltration by fracture flow. The presence of drains and balancing ponds in the wider area supports this hypothesis.

The underlying stratum, London Clay, may present moderate to high sulphate concentrations;  $\text{SO}_4$  causes ionic exchange within the cement mix, leading to the production of ettringite, gypsum or, less commonly, thaumasite. This can cause expansion and softening of the concrete leading to structural failure. Therefore, appropriate testing for sulphates and pH must be undertaken and assessed in accordance with BRE SD1. Should high sulphates or acidic conditions be established at the Site, this is simply rectified with an appropriately specified concrete mix in accordance with BRE SD1 and BS 8500 Parts 1 & 2.

The combination of deciduous trees on the east and north boundaries, and underlying fine (clayey) soils requires consideration for risk of volume change with variation in moisture content, which can result in lifting and movement of in-ground elements if not appropriately designed for where proposed structures are within zones of root influence. Assessment for this would form part of a geotechnical ground investigation.

Where trees are to be maintained, a root protection zone must be observed, which must be cordoned to ensure it remains a no-dig area and free of plant to ensure retention of healthy root systems.

### 2.3. Recommendations

Following a review of the available desk study information a preliminary ground investigation involving a number of dynamic sampler holes is recommended to depths of around 5mbegl (if achievable); the London Clay usually increases in strength quite quickly with depth.

With no meaningful depth of Made Ground anticipated and the River Terrace Deposits indicated in the northwest corner only, the weathered fraction of the underlying London Clay is easily sampled by this modality of investigation, offering little resistance, therefore, this is seen to be the most cost effective method of data collection at this stage. This method allows for the retrieval of samples for both geotechnical and contamination testing if appropriately recovered, gives an indication of the soil strength through *in situ* testing, and allows for the installation of monitoring wells, if required.

It will allow for better understanding of likely foundation requirements and whether further (deeper and more expensive) investigation is required with larger plant. However, should the previous ground investigation GIR be available, a greater understanding of the Site will be enabled and a better targeted investigation may be designed.

### 2.4. Planning Conditions

No planning permission conditions have been indicated to PRP and it is therefore assumed that this has not yet been sought.

The standard requirements that all LPAs must consider for contaminated land assessment are always pre-commencement, meaning that the finalised GIR and RS (if required) must be signed off by the LPA before any groundworks or founding can commence on Site. It is best practice within the industry that tender packs should include these signed off reports otherwise (a) there is a risk that additional investigation is required before the LPA will sign off, and (b) contractors will not have an appreciation of the ground conditions for which they are expected to tender.

Following completion of any remedial works, validation of the measures undertaken and the production of a verification report must be submitted to the LPA. Depending on the form of remediation undertaken, validation of the measures is often undertaken following construction completion, but must always be signed-off prior to hand-over/occupation. The verification report should also detail imported materials and waste certificates for any materials removed from Site.

In the event that further investigative works or monitoring are deemed necessary to ensure the safe progression of the proposed development and its end-users, additional investigation or monitoring must be undertaken unhindered and will always be pre-commencement unless special dispensation is agreed upon in writing with the LPA.

All submission of reports to the LPA for scheme approval and condition discharge is the responsibility of the planning consultant.

### 3 FIELDWORK

#### 3.1. Site Features & Constraints

The Site is roughly triangular shaped, covering an area of around 2.8ha, and appears to be topographically reasonable level. Boundaries to the north and east are defined by tree plantation, known as “Pound Copse”, comprising a variety of predominately broad-leaf deciduous of varying maturity. A public footpath traverses the Site along the eastern and southern boundaries.

Along the northern boundary, within the Site, tipped material likely originating from the Topsoil scrape for the A327 construction mixed with other demolition debris; the exact contents of this cannot be ascertained during this investigation due to being overgrown and unsafe to traverse. A little way into the Site is a mound of waste comprising a number of pallets, wood, tree cuttings, and plastic.

Although the Site appears to be greenfield, brick fragments are evident in the Topsoil across much of the north of the Site. At the time of the investigation, the ground was waterlogged with much of the Site unable to be walked across, however, it is clear from the coverage of marshland grasses and reeds that this is a common, if not permanent situation.

#### 3.2. Scope of Works

The purpose of a Phase II investigation is to assess the potential for in-ground contamination or naturally derived toxic substances within the accessible near-surface soils at concentrations that may have the potential to cause significant risk of significant harm to human receptors within the remit of the end-use classification, the proposed design and those undertaking the site works, as well as considering the wider environmental and proposed in-ground structural receptors. In addition, the geotechnical properties of the underlying strata have been assessed with reference to foundation and floor slab design or other geotechnical design elements, such as earthworks, ground improvements, or retaining structures.

The intrusive fieldwork element was undertaken over three days; Monday to Wednesday, 25<sup>th</sup> to 27<sup>th</sup> March 2024, with locations set out by PRP being considered carefully and in line with the constraints outlined so far in this report and the historical findings. Where there was no observed source of contamination or geotechnical influence, locations were chosen with reference to the proposed scheme and the risks outlined by the Phase I report, as referenced in [Section 2.1](#).

A site-specific utility plan for the Site was not provided by the Client, however, prior to borehole advancement, the immediate area was CAT scanned to check for unexpected or unmapped utilities carrying an electrical signal.

During borehole advancement, SPTs (soil penetration tests) were to be undertaken at metre intervals to assess the strength and compaction qualities of the underlying soils with depth. Where a location cannot be advanced to full depth due to any other situation than refusal, dynamic probing is to be undertaken to full depth.

Due to the high saturation of the underlying soils, no *in situ* falling head tests were carried out for percolation assessment. No monitoring wells were installed due to the collapsed ground; although no ground gas is anticipated, the monitoring of groundwater would have been useful.

Small, disturbed samples were recovered from the near-surface materials and placed in amber glass jars or plastic tubs, as necessary, and taken to a laboratory for contamination testing. A sampling methodology in line with the current guidance and based on a random stratified non-targeted approach was used as no visual evidence of contamination was present. Further rationale of the specific testing undertaken is given in [Section 6](#).

Stratigraphic logging of the tubes recovered during dynamic sampling was undertaken in accordance with BS5930:2015. Samples for geotechnical testing were recovered from the various stratigraphic types directly from the continuous tubes once logging was completed.

### 3.3. Rationale for Locations

In addition to a wider assessment for potential contamination, the locations were positioned as follows as true to the proposed development layout as possible with consideration given for accessibility due to ground softness and saturation:

| Location | Relationship to Proposed | Rationale                                                                                     |
|----------|--------------------------|-----------------------------------------------------------------------------------------------|
| WS01     | Access route             | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assess for subbase.               |
| WS02     | Footprint of Unit 1.     | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assessment for foundation design. |
| WS03     | Footprint of Unit 4.     | Assess geoenvironmental.<br>Assessment for foundation design.                                 |
| WS04     | Yard slab/parking.       | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assess for subbase.               |
| WS05     | Undeveloped area.        | Assess geoenvironmental.                                                                      |
| WS06     | Footprint of Unit 7.     | Assess geoenvironmental.<br>Assessment for foundation design.                                 |
| WS07     | Footprint of Unit 6.     | Assess geoenvironmental.<br>Assessment for foundation design.                                 |
| WS08     | Yard slab/parking.       | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assess for subbase.               |
| WS09     | Footprint of Unit 3.     | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assessment for foundation design. |
| WS10     | Yard slab/parking.       | Assess depth of Made Ground.<br>Assess for subbase.                                           |
| WS11     | Footprint of Unit 2.     | Assess depth of Made Ground.<br>Assess geoenvironmental.<br>Assessment for foundation design. |

## 4 GROUND CONDITIONS IDENTIFIED

According to the BGS online database, the underlying natural strata across the area investigated is recorded as the London Clay Formation apart from the northeast corner, where this is recorded as being overlain with River Terrace Deposits.

### 4.1. Summary of Geology

The geology encountered during the ground investigation is fully detailed in the stratigraphic logs presented in [Appendix B](#). Below is a synopsis of those findings.

| Strata                         | Description                                                                                                                                                                                                                                                                                                                  | Top Depth (mbegl) | Base Depth (mbegl)                         | Thickness (m)                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------|--------------------------------------------|
| Surface Topsoil (Made Ground)  | <u>All bar WS01</u><br>Grass over saturated, soft, organic-rich, placed Topsoil: generally comprising a soft, dark brown, peaty clay with occasional to slightly flint-dominated gravel with fine brick fragments. Strong eutrophic odour. Sometimes with straw mixed at base.                                               | GL                | 0.20 – 0.90                                | 0.20 – 0.90                                |
| Surface Backfill (Made Ground) | <u>WS01 only</u><br>Grass over firm, grey-brown clay containing fragments of concrete and brick, with gravel of flint and sandstone                                                                                                                                                                                          | GL                | 0.20                                       | 0.20                                       |
| Made Ground                    | <u>WS01, WS03</u><br>Large concrete and brick fragments in clay matrix.                                                                                                                                                                                                                                                      | 0.20              | 0.30                                       | 0.10                                       |
|                                | <u>WS02 only</u><br>Firm, grey-brown or clay containing fragments of concrete and brick, with gravel of flint and sandstone                                                                                                                                                                                                  | 0.45              | 0.70                                       | 0.25                                       |
| River Terrace Deposits         | <u>All bar WS08, WS09, WS10, WS11</u><br>Soft to firm, olive and brown, becoming lighter with depth, slightly gravelly, sandy, silty, CLAY.                                                                                                                                                                                  | 0.30 – 1.50       | 0.60 – 2.00                                | 0.15 – 1.40                                |
|                                | <u>WS08</u><br>Soft, saturated (running), yellowish brown SILT.                                                                                                                                                                                                                                                              | 0.40              | 0.80                                       | 0.40                                       |
|                                | Loose to dense, saturated and locally running, orangish brown, slightly clayey, slightly silty variably gravelly, medium grained SAND. Gravel of flint and sandstone.                                                                                                                                                        | 0.40 – 2.00       | 0.90 – 3.00+<br>*Beyond depth of boreholes | 0.20 – 2.20+<br>*Beyond depth of boreholes |
| London Clay Formation          | <u>WS01, WS03, WS07</u><br>Very soft, dark grey, silty CLAY. Dynamic probing indicated increase in strength with depth.                                                                                                                                                                                                      | 2.60 – 2.80       | 3.00+<br>Beyond depth of boreholes         | 0.20+ – 0.40+<br>Beyond depth of boreholes |
| Groundwater                    | The surface soils were saturated.<br>Water strikes were recorded within the RTD at between 0.9m and 2.2mbegl with all strikes indicating slight rising to between 0.35m and 1.9mbegl by the end of sampling.<br>On casing removal, water rose further to between 0.18m and 1.5mbegl, which may be due to lateral inundation. |                   |                                            |                                            |

All locations terminated prior to instructed depth due to wall collapse from water inundation, therefore follow-on dynamic probing was undertaken as indicated on the table below.

| Location         | WS01 | WS02 | WS03 | WS04  | WS05 | WS06 | WS07 | WS08 | WS09 | WS10 | WS11 |
|------------------|------|------|------|-------|------|------|------|------|------|------|------|
| Instructed Depth | 4m   | 5m   | 4m   | 6m    | 5m   | 6m   | 5m   | 4m   | 5m   | 4m   | 5m   |
| Achieved Depth   | 2.4m | 1.9m | 2.6m | 1.60m | 1.4m | 1.9m | 2.5m | 1.6m | 1.7m | 1.6m | 1.7m |
| DP Depth         | 6m   | 6m   | 6m   | 6m    | 5m   | 6m   | 5m   | 6m   | 5m   | 5m   | 6m   |

The natural geological succession revealed was generally in accordance with the published geological data, however, the superficial River Terrace Deposits clearly extends across the entire Site rather than being confined to the northwest corner.

The presence of the coarser River Terrace Deposits across the Site, in conjunction with the level of ground saturation prevented deeper penetration of the dynamic sampler holes and recovery of the samples from greater depths.

## 5 GEOTECHNICAL ASSESSMENT & ASSOCIATED RISKS

A programme of testing was instructed to determine the geotechnical properties of the near-surface soils following assessment of the stratigraphic logs.

Laboratory based geotechnical testing was undertaken by Soil Property Testing (SPT) of Huntingdon in accordance with the requirements of BS1377:1990. SPT follow a Quality Audit system which has been designed to ensure continual compliance to BSEN ISO/IEC 17025:2005. The laboratory is regularly audited by UKAS and holds accreditation for specific tests identified; full details of their UKAS schedule may be found on their website.

In addition to the *in situ* standard penetration tests (SPT) undertaken, the following laboratory-based geotechnical tests were scheduled:

| Quantity: | Test:                                                                |
|-----------|----------------------------------------------------------------------|
| 6         | Moisture Content                                                     |
| 3         | Atterberg (plasticity)                                               |
| 4         | Particle Size Distribution (PSD)                                     |
| 3         | Particle Size Distribution (PSD) with fines separation by hydrometer |
| 16        | Sulphate/pH (include 4 BRE Suite B: greenfield with pyrite)          |

The resultant data is presented in [Appendix C](#).

An assessment of the geotechnical risks associated with the Site and proposed development, as seen during the initial site reconnaissance survey and the intrusive ground investigation, has been considered in general accordance with the guidance outlined in the DMRB CD 622 (2020) document 'Managing Geotechnical Risk' (formerly HD22/08, BD10/97, HA120/08).

This assessment considers the degree of risk attached to various ground related elements of the proposed development posed by common ground related problems, and identifies suitable measures to control the risk to an acceptable level should it be deemed appropriate; If present, these are discussed as part of the geotechnical design recommendations outlined below.

### 5.1. Stratigraphic Interpretation and Geotechnical Assessment

Made Ground was recorded to depths of between 0.2m and 0.9mbegl and, in the form of placed Topsoil, generally comprised an organic-rich medium with a strong eutrophic (anoxic) odour, which was often mixed with straw presumable to form a stabilising matrix within this very soft material. At the base of this material, a thin layer of "hard core" was encountered in WS01 and WS03 (western boundary) giving evidence of previous use as a construction compound. In WS01 and WS02, a clayey backfill was present, which contained concrete and brick fragments.

It should be noted that the placed Topsoil cannot be used in any engineered capacity due to its inherent low strength and high organic content. It can however be reused in areas of soft landscaping with a low angle of slope unless seeded meshing is incorporated.

Contrary to BGS records, the natural River Terrace Deposits (RTD) was encountered across the entire Site as a cyclic variably gravelly, variably sandy CLAY, generally defined by its yellowish and greenish colouring, interbedded with clayey, variably gravelly SAND. However, locally this included elements of running sand or silt. Figure 1 below, shows a wide range in strength within the natural RTD, through comparison with the logs ([Appendix B](#)) it can be seen that the lower strength relates to the finer clay-dominated deposits having much lower strength and the higher strengths to the sands and gravels.

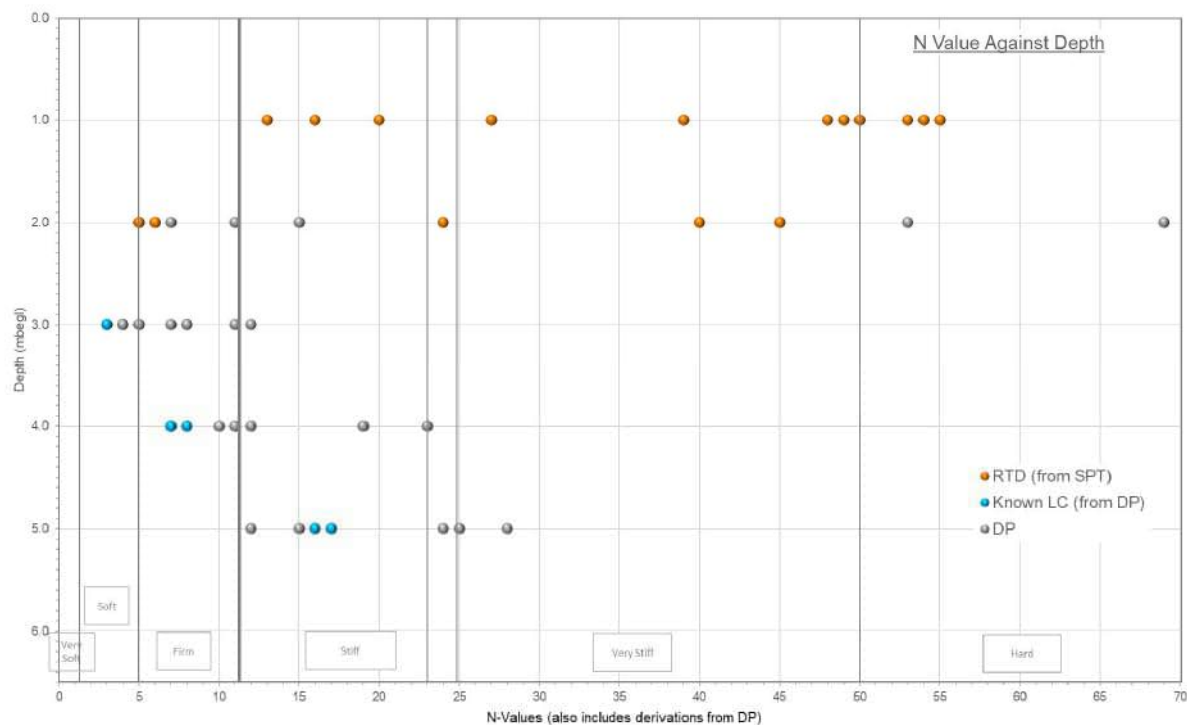


**Figure 1: N Value against Depth**

Also shown in Figure 1 is the low strength of the underlying London Clay (LC). As previously noted, the ground surface was water-logged across much of the Site, which appears to be a common, if not permanent, situation. This saturation has a softening impact on the surface of the clay, which itself acts as an aquiclude (capable of absorbing water slowly but cannot transport it, therefore acts as a confining bed relative to the RTD overburden). This hypothesis is supported by the increase in strength within the LC with depth. Therefore, it would be recommended that some form of ground improvement that is compatible with the level of groundwater/surface water should be considered.

As noted earlier, the saturation of the soils caused collapse within the dynamic sampling holes, therefore dynamic probing (DP) was used to ascertain the interface between RTD and LD and to assess the soil strength at depth. Figure 1 shows a comparable strength drawn from the DP data at equivalent depths to where SPTs would have been undertaken; interpretation of this indicates that most of the DP data was drawn from the LC. The table below is an extract from the DP data from each location where LC was not encountered through dynamic sampling (shaded blue were encountered by dynamic sampling). This shows a likely RTD/LC interface in the majority of locations (represented by the blue line); full DP data is presented with the logs in [Appendix B](#).

From this data, it can be concluded that LC was encountered from between 2.2m and 3.1mbegl; data recovered from WS02, WS04, and WS06 is inclusive as the collapsed material would be very loose, therefore, a clear distinction between that and LC is not apparent. However, it can be assumed that the interface between the two strata would likely fall within the range indicated above. Location WS05 is the further position southward and therefore it would be reasonable to interpret this as likely having the shallowest RTD overburden.

| Depth (mbegl) | Blow count per 100mm |      |      |      |      |      |      |      |      |      |      |
|---------------|----------------------|------|------|------|------|------|------|------|------|------|------|
|               | WS01                 | WS02 | WS03 | WS04 | WS05 | WS06 | WS07 | WS08 | WS09 | WS10 | WS11 |
| 2.0 – 2.1     |                      |      |      | 3    | 8    |      |      | 15   | 18   | 13   | 8    |
| 2.1 – 2.2     |                      |      |      | 3    | 8    |      |      | 17   | 14   | 11   | 16   |
| 2.2 – 2.3     |                      |      |      | 2    | 4    |      |      | 18   | 8    | 6    | 21   |
| 2.3 – 2.4     |                      |      |      | 2    | 2    |      |      | 18   | 4    | 3    | 24   |
| 2.4 – 2.5     |                      |      |      | 2    | 1    |      |      | 17   | 1    | 2    | 23   |
| 2.5 – 2.6     |                      |      |      | 5    | 1    |      |      | 12   | 2    | 1    | 23   |
| 2.6 – 2.7     |                      |      |      | 5    | 1    |      |      | 7    | 1    | 1    | 24   |
| 2.7 – 2.8     |                      |      |      | 3    | 1    |      |      | 4    | 2    | 1    | 24   |
| 2.8 – 2.9     |                      |      |      | 2    | 2    |      |      | 2    | 2    | 2    | 20   |
| 2.9 – 3.0     |                      |      |      | 3    | 3    |      |      | 2    | 2    | 1    | 14   |
| 3.0 – 3.1     |                      | 2    |      | 3    | 2    | 1    |      | 2    | 3    | 2    | 8    |
| 3.1 – 3.2     |                      | 1    |      | 3    | 3    | 1    |      | 2    | 2    | 2    | 3    |
| 3.2 – 3.3     |                      | 2    |      | 3    | 4    | 1    |      | 2    | 3    | 2    | 2    |
| 3.3 – 3.4     |                      | 1    |      | 3    | 4    | 2    |      | 3    | 4    | 3    | 1    |
| 3.4 – 3.5     |                      | 2    |      | 2    | 4    | 1    |      | 9    | 4    | 3    | 1    |
| 3.5 – 3.6     |                      | 1    |      | 3    | 4    | 1    |      | 4    | 4    | 3    | 2    |

According to the current guidance, shrinkable soils are those containing more than 35% fine particles and having a modified plasticity index of 10% or greater. Fine particles are defined as those having a nominal diameter less than 60µm (i.e., clay and silt particles).

The British Soil Plasticity Classification is drawn from the liquid limit, and gives an indication of the potential for moisture absorbency before the soil reaches saturation.

Atterberg limit (plasticity) tests are undertaken on samples with a reasonable clay content (i.e., >30%). The modified plasticity is in accordance with the current standards, which considers the percentage passing through the 425µm sieve (fine particles and any medium and fine grained sand particles with a nominal diameter of less than 425µm as outlined by BS1377). The results are shown in the table below, with all samples recovered from the London Clay.

| Location | Depth      | LL (%) | PL (%) | PI (%)<br>LL-PL | MC (%) | Passing<br>425µm<br>(%) | Modified<br>PI (%) | Potential<br>for Volume<br>Change | British Soil<br>Plasticity<br>Classification |
|----------|------------|--------|--------|-----------------|--------|-------------------------|--------------------|-----------------------------------|----------------------------------------------|
| WS01     | 2.6 – 3.0  | 59     | 21     | <b>38</b>       | 27.4   | 0                       | N/A                | Medium                            | High                                         |
| WS03     | 2.8 – 3.0  | 54     | 20     | <b>34</b>       | 27.4   | 0                       | N/A                | Medium                            | High                                         |
| WS07     | 2.85 – 3.0 | 55     | 21     | <b>34</b>       | 32.9   | 0                       | N/A                | Medium                            | High                                         |

The results confirm that the samples tested have a plasticity index (PI) of between 34% and 38%, with no modification necessary (indicating a homogenous fine soil). The results show that the underlying London Clay is of high plasticity and, in accordance with the classification guidance, with medium potential for volume change with variations in moisture content, therefore, **for design purposes, medium volume change potential must be adopted.**

| Location | Depth: (m) | LL (%) | PL (%) | PI (%)    | MC (%) | MC<0.4LL | LI<br>(MC-PL)/PI | LI<0 |
|----------|------------|--------|--------|-----------|--------|----------|------------------|------|
| WS01     | 2.6 – 3.0  | 59     | 21     | <b>38</b> | 27.4   | ✗        | 0.17             | ✗    |
| WS03     | 2.8 – 3.0  | 54     | 20     | <b>34</b> | 27.4   | ✗        | 0.22             | ✗    |
| WS07     | 2.85 – 3.0 | 55     | 21     | <b>34</b> | 32.9   | ✗        | 0.35             | ✗    |

In terms of desiccation of the underlying fine soil as a result of tree influence, reference has been made to BRE 412, which indicates that the likelihood of desiccation can be ascertained by comparing the liquidity index to zero, and by considering the relationship between moisture content and liquid limit. However, an apparent desiccation profile can also present as a result of over-consolidated deposits or reworked soils yet to return to porewater equilibrium.

The above results clearly show the fine soils to be in a plastic state although the moisture content recorded is closest to the plastic limit but, as anticipated due to the high saturation level across the Site, with no indication of dewatering within the soil matrix, however, this may change once the Site has been drained in preparation for development.

A number of trees are present around the Site perimeter to the north (mostly hawthorn) and west, which range in size, maturity and species, but predominately broad leaf deciduous. There are elements of the development that may be within zones of root influence and must therefore be appropriately designed for to reflect the potential constraints in accordance with the current guidance. This will still apply even where trees have been removed, to allow for porewater pressure equilibrium within fine soils (which can take decades), particular where high water demand tree species are removed.

Where trees are to be maintained, a cordoned root protection zone must be observed to protect the tree and underlying root expanse to ensure it remains a no-dig area and free of weight, such as plant or construction materials, to ensure retention of the healthy root system.

The moisture content of the samples tested was recorded at between 21% and 23.7% near surface and between 21.4% and 32.9% in the London Clay. **Figure 2** below shows that moisture content is within a relatively narrow band, regardless of stratum or depth; this is reflective of the high saturation state of the soils encountered across the Site.

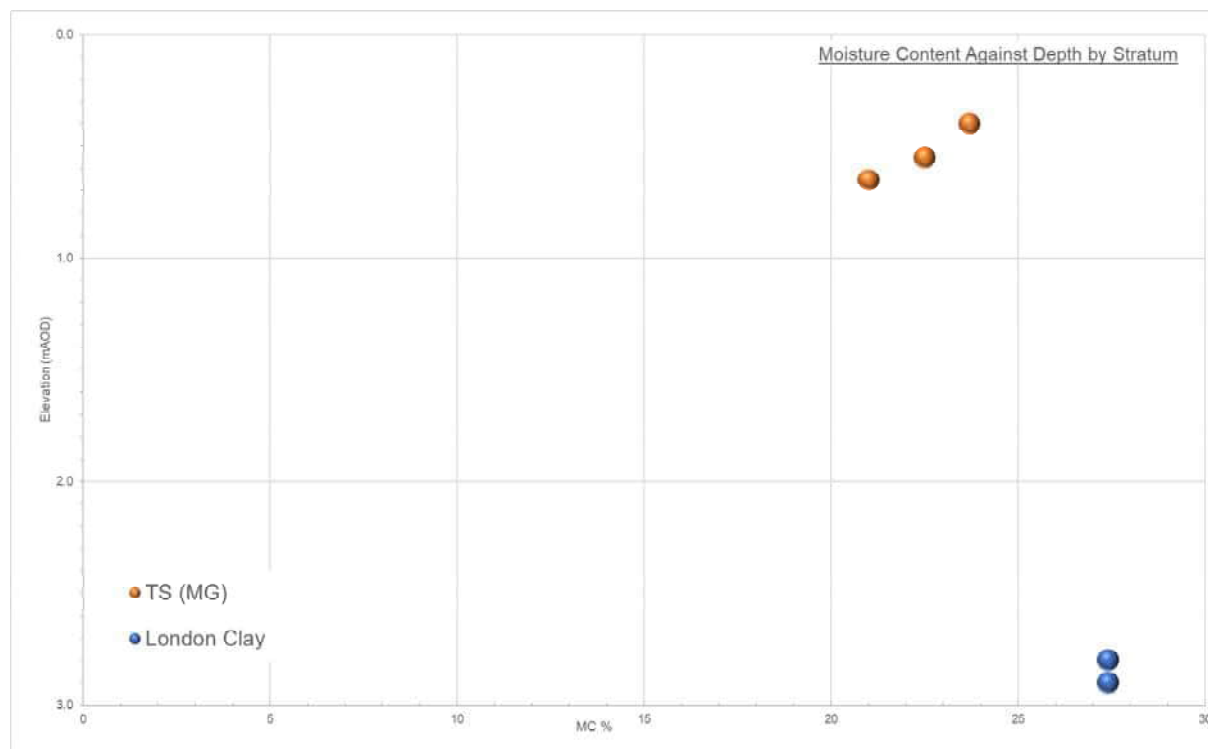


Figure 2: NMC against Depth by Stratum

Particle size distribution (PSD) tests were undertaken on samples recovered from coarser soils to assess the fine content. Soil with a 35% or greater fines content (i.e., silt and clay particles of less than 63µm diameter) is considered to have the engineering properties of fine soils. Of the samples tested, the results from the PSD tests show a well-graded SAND and GRAVEL with finer beds/inclusions of clayey SAND. However, the cyclic nature of the River Terrace Deposits must be appreciated, which includes local inclusions of clayey material as well as running sand and silt. That being said, no element of the RTD is fine to any substantial depth to be subject to volume change with variation in moisture content.

| Stratum    | No. of Tests | Clay              | Silt              | Fines                 | Sand                   | Gravel                   |
|------------|--------------|-------------------|-------------------|-----------------------|------------------------|--------------------------|
| RTD (clay) | 1            | 17%               | 21%               | 38%                   | 53%                    | 9%                       |
| RTD (S&G)  | 6            | 3 - 5<br>Mean: 4% | 2 - 4<br>Mean: 3% | 5 - 25<br>Mean: 10.6% | 34 – 51<br>Mean: 41.6% | 34% - 61%<br>Mean: 47.6% |

For the natural (moist) sandy gravel, an angle of repose of no more than 25-30° should be assumed.

## 5.2. Matrix of Geotechnical Results

| Stratum              | MC (%)      | Plasticity | NHBC Vol. Change Risk | PSD              | Bulk Density (Mg/m <sup>3</sup> ) | Dry Density (Mg/m <sup>3</sup> ) | Concrete Design |
|----------------------|-------------|------------|-----------------------|------------------|-----------------------------------|----------------------------------|-----------------|
| MG (saturated)       | 21 – 23.7   |            |                       |                  | 12-15<br>(assumed)                |                                  | DC-3z           |
| RTD Clay (saturated) |             |            |                       | 38% fines        | 20<br>(assumed)                   | 18.5±1.5<br>(assumed)            | DC-1            |
| RTD S&G (saturated)  |             |            |                       | 10% fines (mean) | 21.5<br>(assumed)                 | 19.5±1.5<br>(assumed)            | DC-1            |
| LC (firm)            | 21.4 – 32.9 | High       | Medium                | 100% fines       | 18<br>(assumed)                   |                                  | DC-1*           |

Where noted as assumed, data has been taken from generic tables associated with the soil type. Asterisk denotes reference should be made to the notes within the relevant section below.

## 5.3. Ground Water/Infiltration

An important factor when considering the geotechnical parameters and competencies across a site is the groundwater regime, as it affects the behaviour of the underlying strata, and therefore, the in-ground design elements.

As indicated in the section above, the moisture content of the soil ranged between 21% and 23.7% for the near surface material and between 21.4% and 32.9% in the London Clay.

Falling heads were not undertaken during the ground investigation due to the surface saturation level. In addition, further water strikes were recorded in all dynamic sampler holes, as indicated in [Section 4.1](#) with water levels at near surface by the end of sampling in many cases.

As indicated above and within the Desk Study Report, the flora across the Site suggests the area is regularly, if not permanently, holding areas of surface water/marshy ground. This would therefore deny the use of soakaways. However, as previously reported upon, a drainage gully is present to the northwest of the Site, to which surface water could drain. Additionally, swales are constructed in the wider area, which would mitigate against overwhelming the drainage ditch.

It is recommended that appropriate drainage feasibility and design be undertaken separately.

## 5.4. Ground Improvement/Earthworks

No geotechnical structures, such as retain walls or earth bunds, are proposed for the development, therefore, the only apparent earthworks would be the scrape-back for the construction areas. As the logs indicate, material unsuitable for any engineered use ranges in depth from 0.2m to 0.9mbegl, however, reuse in landscaped areas would be suitable due to the high organic content.

Additionally, the material tipped along the northern boundary should be removed. It would be beneficial if this were sorted and could be repurposed within the development rather than removing from Site. However, with the potential quantity of material to be scraped back plus any excavation for swales required to alleviate surface water drainage, removal from Site of some material may be unavoidable.

It is clear from the logs and low strength soils that some form of ground improvement will be required, however, the presence of water at the Site prohibits some modalities. It is likely that the most efficient form would be to install VSC (vibro stone columns) to depths of around 6mbegl around the structural footprints. Discussions with a specialist contractor would be recommended as soon as possible; we have contacted Vibro Menard for feasibility assessment their comments are as follows:

*Reviewing the site investigation for this scheme, the ground seems to be quite dense in most of the areas with only very shallow made ground layer to be treated.*

*However, looking at WS01 and WS04 where they both have low NSPT values of 5 - 6, and the logs have stopped at 2-3 meters as they collapse from the water level, which leaves some uncertainty in the viability of the technique as such logs with low NSPT values, could lead to bulging failure of the stone columns.*

*We note that these values might have been low because of the high water level and not the stiffness of the layer itself, and to clarify the water has no effects on the viability of the VSC technique, we use different installation methods to cope with the high water table and install our columns as required, hence there isn't any issue with the water table being high and we still can achieve the required criteria as normal.*

*I would first ask you for the location plan of these logs and if WS01 & WS04 are within the footprints of the proposed structure.*

*In the case that they are, **we would offer ground improvement by Vibro Stone Columns (VSC) subject to further site investigation by Cone Penetration Tests (1 day of CPTs) to be done within the footprints of the proposed structure to confirm the viability of the technique and clear out any doubt/uncertainty there may be.** Alternatively, should VSCs not be suitable, we can offer ground improvement by Controlled Modulus Columns (CMCs).*

## 5.5. Concrete Classification

Sulphates and acidity are assessed to ensure the correctly designed concrete mix for in-ground components of the proposed development. High sulphates can cause concrete to expand and degrade to a gelatinous consistency, thus negating structural integrity over time. Acidic conditions act to “dissolve” the cement mix main constituent. Although the Site is undeveloped, it is assumed brownfield due to the previous use as a construction compound and subsequent imported Topsoil material.

The results below show the summation of testing from both the geotechnical and geochemical laboratories:

| Stratum     | Results (nr.) | SO <sub>4</sub> conc <sup>n</sup> range (mg/l) | Total SO <sub>4</sub> (%) | pH range  | Sulphate Class | ACEC  | Concrete Design |
|-------------|---------------|------------------------------------------------|---------------------------|-----------|----------------|-------|-----------------|
| Made Ground | 5             | 20 - 100                                       | 0.03%                     | 5.1 – 8.2 | DS-1           | AC-3z | DC-3z           |
| RTD Clay    | 3             | 128 - 159                                      | 0.042%                    | 6 – 6.8   | DS-1           | AC-1  | DC-1            |
| RTD Sand    | 4             | 29.3 - 100                                     | 0.015%                    | 6.3 – 7.2 | DS-1           | AC-1  | DC-1            |
| London Clay | 3             | 260 – 370                                      |                           | 6.7 – 7.2 | DS-1           | AC-1  | DC-1*           |

The table above shows that in-ground structures within the natural soils can use DC-1 for concrete design. The breakdown of individual locations can be viewed on the analysis presented in [Appendix D](#), the emboldened numbers in the table above denote the considered exceedances.

The acidic content with the Made Ground was encountered in two locations: WS04 and WS07 which lie on an west-east line across the Site, being the southern end of proposed unit 6. However, this elevation in acidity is undoubtedly associated with the organic content within the near-surface materials, which will be removed prior to development as part of the pre-construction earthworks.

Additionally, it should be noted that only the surface material from LC was tested, it is likely that sulphate content will increase with depth due to some beds within the LC known to contain selenite crystals.

The concrete class shown above should be adopted for the building foundations and other below-ground concrete elements and is based on a structural life span of up to 100 years, determined using a mobile groundwater model, however, the **London Clay at greater depths should be tested as it may increase the concrete requirement to DC-2.**

## 5.6. Foundations

Made Ground, disturbed ground and general fill material are unsuitable for founding within since they may consolidate excessively and differentially when subjected to a structural load. Made Ground was recorded to depths of between 0.2m and 0.9mbegl and comprised highly organic, soft Topsoil with straw and fine demolition debris material mixed within.

As discussed in [Section 5.1](#), the strength of the natural RTD at 1mbegl is generally of sufficient strength, however, the presence of near surface and surface water means a diminished bearing pressure. Additionally, the natural bedrock, LC, is located at depths of between 2.2m and 3.1mbegl, and due to the soil saturation, has been greatly softened to depths of around 4.5m to 5mbegl, which demonstrates firm to stiff material, however, deepening will be likely for units 5 and 6 (WS07) to around 6mbegl.

London Clay is known for the presence of selenite within some beds; this is a sulphur-based crystalline mineral. Sulphate can react with in-ground concrete elements; this can easily be mitigated by using an appropriate concrete mix, as outlined in the previous section. Although the limited testing ([Section 5.5](#)) indicates DC-1 concrete requirements, an increase in sulphate content should be anticipated with depth in the LC, which may require DC-2 concrete design.

As indicated in [Section 5.4](#), ground improvement is recommended, likely by VSC. Required bearing pressures for the portal frame structures will be in the region of 125kPa, with FoS, a minimum of 175kPa should be sought through ground strengthening.

On completion of the ground improvement works, pad foundations should be founded at 1mbegl.

Inflows are to be expected in all excavations and dewatering techniques will likely be required at all times of the year. Therefore, temporary formwork to excavations may also be required to prevent the collapse of excavation sides; this will be particularly relevant during periods of rainfall.

## 5.7. Ground Floor Slabs

As discussed in [Section 5.1](#), unsuitable soils were proven to depths of between 0.2m and 0.9mbegl, however, once striped back from the development areas, this will not impact floor slabs or yard slabs. Note the acidity (see [Section 5.5](#)) within this material, undoubtedly due to the high organic content. Ground floors should be constructed as ground bearing slabs in commercial units, therefore the Made Ground must be removed prior to proof rolling the sub-formation.

Laboratory test results indicate that the near-surface coarse (coarse RTD) fraction of the soil at 1mbegl can be considered medium-dense to very dense (N-values of 13 to 55), however, softer areas of clay-dominated material (WS01, WS02, WS06) may require excavation with additional granular material incorporated.

As indicated in [Section 5.3](#), ground improvement is likely in order to increase the soil strength beneath the footprint of the proposed structures. This will reduce any potential effects of differential settlement due to the variable strength within the current underlying soils.

Assuming this is the case, commercial ground floor slabs should be constructed as ground bearing and designed in accordance with TR34. It is recommended that plate bearing tests be undertaken on the proof-rolled formation, post-groundworks, to determine the value for the Modulus of Sub-grade Reaction, k. This can only be undertaken after the sub-formation has been exposed, and only once preparatory groundworks (reprofiling and ground improvement) have been completed.

However, following ground improvement, should any spots of superficial soft material be encountered, these must be removed prior to proof rolling the sub-formation, and all floor slabs should be constructed on properly installed 2000-gauge damp proof membrane; **Characteristic Situation 1** can be assumed due to lack of viable source for gas.

## 5.8. Access Road & Parking

The structural design of the access road and areas of hard-standing is based on the strength of the subgrade (natural ground) which is assessed on the California Bearing Ratio (CBR) scale.

With regards to the natural coarse (granular) sands and gravel of the RTD, approximate CBR values for the subgrade can be estimated on the basis of the superficial arisings' strength and plasticity ascertained from the intrusive investigation, and with reference to *Structural Design of Bituminous Roads* – TRRL Report LR1132, Appendix C (indicates a CBR of 40). *In situ* CBR values tend to give unreliable results because of the influence of the moisture content on the materials. In practice, the correlation given in TRRL Report 1132 is usually more appropriate than direct determination of the CBR.

In all situations, the stratum revealed at formation level should be trimmed and proof rolled, using suitable plant, where soft spots are identified, these should be excavated and backfilled with compacted 6F5/6F2 granular capping, alternatively large cobbles of natural good quality stone should be rolled in and compacted to refusal.

## 5.9. Further Geotechnical Assessment

Further assessment is recommended as sample assessment was undertaken only to between 2m and 3mbegl, particularly in light of the likelihood for increased sulphates with depth in the London Clay, which may determine that in-ground concrete elements require DC-2. This will also allow for installation of groundwater monitoring stand pipes.

For design of appropriate groundworks/improvement, the current data outlined above is likely to be sufficient. However, it is recommended that contact be made with a specialist contractor, PRP have reached out to Vibro Menard for a feasibility assessment for VSC to around 6m with localised deepening for Units 5 and 6 likely to be required. However, this would require confirmation by CPT testing.

## 6 GEOCHEMICAL TESTING RATIONALE AND SCHEDULE

Laboratory testing to determine the environmental properties of the near surface soils was undertaken by i2 of Watford and, where shown in the results, MCERTS accreditation has been provided. i2 follow a quality audit system which has been designed to ensure continual compliance to BSEN ISO/IEC 17025:2005 and the laboratory is also regularly audited by UKAS and holds accreditation for specific tests identified.

No visible evidence of contamination was present at surface, however, Made Ground was identified, which contained demolition debris. Testing was therefore undertaken with the aim of confirming the presence or absence in the underlying strata of a broad spectrum of metal, transition and non-metal compounds, including organics, that may present significant risk of significant harm to the critical human receptor and wider environment, in accordance with the current UK guidance and the pQRA presented in the Phase I report.

Testing of the recovered soil samples was scheduled as outlined below. If asbestos is identified in any of the samples, quantification is automatically undertaken in order that we can properly assess the likely risk to human receptors. Samples submitted for asbestos tested were recovered from adjacent areas to the tipped material along the northern boundary as this would be the most likely area to encounter it, if present, due to the inclusion of some demolition debris.

As excavation is expected to be undertaken as part of the construction for foundations and service trenches, samples were tested with respect to Waste Assessment Criteria (WAC) to ensure correct disposal regime and tax levy are applied.

It should be noted that the tipped material along the norther boundary was not sampled due to unsafe accessibility.

| Quantity: | Test:                                                                  |
|-----------|------------------------------------------------------------------------|
| 9         | <u>General Environment Suite – Soil</u>                                |
|           | Soil Organic Matter (%)      pH      Sulphate (Total)                  |
|           | Arsenic (Total)      Beryllium (Total)      Boron (Water Soluble)      |
|           | Cadmium (Total)      Chromium (Total)      Hexavalent Chromium         |
|           | Copper (Total)      Lead (Total)      Mercury (Total)                  |
|           | Nickel (Total)      Selenium (Total)      Vanadium (Total)             |
|           | Zinc (Total)                                                           |
|           | Phenols (Total Monohydric)      Cyanide (Total)      Sulphide          |
|           | Speciated Polycyclic Aromatic Hydrocarbons (PAH) Fractions (USEPA16)   |
|           | Monoaromatics & Oxygenates      CWG TPH (Total Petroleum Hydrocarbons) |
| 4         | Asbestos Screen & ID                                                   |
| 4         | BRE (Greenfield with pyrite) Suite                                     |
| 3         | WAC (Waste Acceptance Criteria)                                        |

The results are presented in [Appendix D](#).

## 7 ANALYSIS OF GEOCHEMICAL RESULTS

### 7.1. Soil Testing

For the purpose of risk assessment, the LQM/CIEH S4UL (suitable for use level) or, where not published by LQM, the Defra C4SL (category 4 screening level) has been assumed and is noted on the quantitative analysis of results presented in [Appendix D](#).

For a full commentary on the criteria for contamination assessment used by PRP, please refer to [Appendix E](#).

All analyses are against the generic criteria concentrations set for 'commercial' end-use. This category is deemed to be the most appropriate for the proposed end-use and represents the maximum concentrations for the substances assessed; i.e., which do not represent elevated levels of risk to human targets by any pathway in accordance with the development area type.

However, as outlined within EPA: Part 2A of the Statutory Guidance (2012 Defra), "3.29: generic acceptance values relating to human health risk assessment represent cautious estimates of levels of contaminants in soil at which there is considered to be no risk to health or, at most, a minimal risk to health.", i.e., depending on the proposed end-use, any exceedance should be seen as a flag for further scrutiny and discussion rather than an automatic need for remedial measures. Academic computational assessment aside, there is little risk from in-ground soil contamination with a lack of viable source. However, even low concentrations not normally considered for end-use must be considered during construction as site workers are considered the most vulnerable receptor at this stage albeit with short-term exposure. Should a generic assessment criterion be exceeded, where possible, a DQRA (detailed qualitative risk assessment) will be undertaken in the form as outlined in the discussion below for the particular compound in question, and where appropriate or possible, a SSAC (site specific assessment criterion) modelled, using EA CLEA, and will be indicated on the analyses included in [Appendix D](#).

#### 7.1.1. Discussion of Results

The SOM% was recorded at between 0.3% and 6.7%, with a mean average of 2.5%, therefore, the most stringent criteria of 1% on the hydrocarbon compounds was assumed.

Of the 9 soil samples recovered during the ground investigation and submitted for testing, no exceedances of the end-use criteria were established and therefore no significant risk of significant harm to human health or the wider environment can be assumed.

### 7.2. Asbestos Content

The likely impact to the end-user, should the presence of asbestos be proven is considered negligible as remedial measures would be employed to protect the end-user. The main receptor at risk is considered to be the site worker during the demolition, earthworks, and construction phases as they will be exposed to the soils until any hard surfacing or cover system has been constructed.

According to HSG 248, published 2021, 7.21 ... *Air monitoring has shown that airborne fibre concentrations rarely exceed the LoQ and are unlikely to exceed the control limit unless the work is*

*disturbing relatively high percentages (>1%) of unbound asbestos in dry soil. Where there is mostly bound asbestos in soils, below a mass concentration of 0.1% w/w, airborne fibre concentrations are unlikely to exceed the LoQ for personal sampling. When the soil is damp or wet, airborne emissions of asbestos will be suppressed and wind dilution and dispersion of any emissions will also reduce worker and bystander exposures.*

The *JIWG (CAR-Soil) Industry Guide on the Control of Asbestos Regulation 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials* indicates the following concentration descriptors:

- $\geq 0.1\%$  wt/wt is defined as a large quantity
- $\geq 0.05\%$  to  $< 0.1\%$  wt/wt is defined as a moderate quantity
- $\geq 0.01\%$  to  $< 0.05\%$  wt/wt is defined as a low quantity
- $\geq 0.001\%$  to  $< 0.01\%$  wt/wt is defined as a very low quantity.

This guidance is for site workers, and in this case, this is the most likely receptor group to be affected by any in-ground contamination at a site, if present.

#### **7.2.1. Discussion of Results**

There was no visual evidence of asbestos presence at the Site, and no source was identified during the Tier 1 assessment. This is supported with no asbestos identified in any of the samples submitted for laboratory testing. Therefore, no significant risk of significant harm to the critical human receptor or wider environmental receptors is considered to be present due to asbestos.

#### **7.3. Ground Gas Assessment**

Ground gas was not identified as a risk by the pQRA presented in the Phase I report due to there being no known source. The ground investigation did not reveal material readily associated with the production of ground gas at impactful concentrations to humans and therefore, post-ground investigation monitoring was not considered necessary for the progression of the development.

According to the online page UKradon.org, managed by PHE, the Site is located within an area where less than 1% of properties are above the action level.

This is indicative of low risk and, under England & Wales Building Control Regulations, no radon protection measures are necessary for this commercial development.

#### **7.4. Waste Acceptance Criteria (WAC)**

As indicated in [Section 6](#), a total of 3 soil samples were recovered during the ground investigation and tested with respect to Waste Assessment Criteria (WAC) testing. The results of those tests are as follows:

- |   |      |                   |       |                                                    |
|---|------|-------------------|-------|----------------------------------------------------|
| • | WS01 | 0.10m – 0.20mbegl | (MG)  | Non-hazardous (slightly elevated SO <sub>4</sub> ) |
| • | WS03 | 1.20m – 1.30mbegl | (RTD) | Inert                                              |
| • | WS04 | 0.70m – 0.80mbegl | (RTD) | Inert                                              |

pH has no limit for inert or hazardous waste landfill, however, for waste acceptance as stable non-reactive hazardous waste in non-hazardous landfill (SNRHW) the pH must be above 6. If any parameter is outside of inert but below the threshold for SNRHW (as is Molybdenum in this case), then the pH must meet the limit of 6.

From the limited testing undertaken, the results suggest that the natural soils will be inert waste classification. However, Made Ground, comprising backfill, Topsoil (placed), tipped material, and compound surfacing is likely to be a combination of inert and stable non-reactive hazardous waste classification. Due to the extent of Made Ground across the Site, it is recommended that WAC testing is undertaken as required and sampled from the stockpiles to be removed. These are for material to be removed from Site to a waste processor facility; these are not a reflection of the end-use criteria for material remaining at Site. The WAC certificates are presented in [Appendix D](#).

It is therefore recommended that any material requiring removal from Site should be stockpiled for further testing, which can be undertaken by the groundworks contractor as and when required. It is recommended (and good practise) that stockpiles are stored on an impermeable membrane. The resultant WAC certificates should then be supplied to the receiving party; copies of which must be retained for inclusion in the validation process as outlined within the planning conditions.

It is the responsibility of the Principal Contractor to ensure that testing undertaken is adequate (of appropriate frequency to m<sup>3</sup> of material being removed) and in accordance with the current guidance (Guidance: Disposal of Waste to Landfill, updated 2023), however, it must also be noted that some LPAs supply area-specific guidance which override the national guidance and must be adhered to.

In all cases, Waste Transfer Tickets (pink tickets) must always be retained for presentation within a verification report, should one be requested as proof of due and correct process at the end of the development phase in order that the local regulatory authority can discharge all planning conditions.

## **7.5. Further Geochemical Assessment**

In the event that arisings require removal from Site, further WAC testing should be undertaken as outlined above.

As previously indicated, the tipped material along the northern boundary was not sampled for testing. Should this material require removal from Site, WAC testing should be undertaken, as outlined above.

## 8 GENERIC QUALITATIVE RISK ASSESSMENT FOR LAND CONTAMINATION

Following completion of the Stage 1, Tier 1 preliminary qualitative risk assessment, as presented in the Phase I report, and analysis of results gained from the ground investigations ([Section 7](#)), a Stage 1, Tier 2 generic quantitative risk assessment for land contamination can be presented. Current guidance on the assessment of contaminated land requires the risk to human health, to buildings and to the wider environment to be reviewed using a source-pathway-receptor linkage relationship. If each of these elements is present, the pollution linkage provides a potential risk to the identified receptors and conversely, if one of these is missing, the model fails to be realised, thereby rendering the risk either '**Negligible**' if present but below criterion, or "**NR**" if no evidence of presence, and thereby no risk, due to the failure of the source-pathway-receptor model (i.e., an element is absent).

This model is set in the context of the proposed development of the Site for '**commercial**' end-use, based on assessment for a 21-y-o adult, and updates the pQRA presented in the Phase I report as discussed in [Section 2.2](#).

### 8.1. Updated Source - Pathway - Receptor Linkages Risk Assessment

Made Ground was observed to depths of between 0.2m and 0.9mbegl, as discussed in [Section 5.1](#), and being mostly of organic-rich Topsoil with fine demolition arisings and straw in places. The Site was saturated at the time of investigation, with surface water sitting in most areas. Underlying the imported Topsoil is the natural River Terrace Deposits (RTD), comprising variably gravelly, clayey SAND with inclusions of clay-dominated material. The coarse material of the RTD and the high water levels establish potential pathways of in-ground lateral migration and surface saltation. The Site is currently an area of undeveloped land, however, it has previously been used as the construction compound for the adjacent A327. However, on completion, the Site will be dominated by hard landscaping with no additional soft landscaped areas.

As discussed in [Section 7.1](#), no minor exceedances of the assessment criteria in relation to the end-use categorisation were proven, and therefore no significant risk of significant harm to the critical human or the wider environmental receptors is present.

Likewise, the risk of impact to groundwork and construction workers is considered negligible in relation to short-term exposure, with the most plausible pathway being through direct contact (consumption). This can easily be overcome using standard good working practices and PPE, including hand washing prior to eating.

As discussed in [Section 7.2](#), no asbestos fibres were identified from the ground investigation.

Following on from the previous reports for the Site, as referenced in [Section 2.1](#), and the current GI data, the likelihood of risk of contamination or harm to human, environmental, or in-ground structural receptors can be further assessed, as outlined below. Individual sources are often impossible to separate and have therefore been combined by contaminant type. For an explanation of the risk categories identified within the matrix, please refer to [Appendix F](#).

| Source<br>(Type and location)                                                                                                                                                                                                                       | Receptor                                              | Pathway                              | Initial Assessment from<br>Desk Study Information |          |            | Proposed Investigation/Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hazard<br>Linkage | Revised<br>Risk | Proposed<br>Remediation<br>/Management | Residual<br>Risk |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------|---------------------------------------------------|----------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------|----------------------------------------|------------------|
|                                                                                                                                                                                                                                                     |                                                       |                                      | Severity                                          | Prob.    | Risk       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
| <b>Onsite:</b><br>Toxic & phytotoxic<br><b>heavy metals</b> and<br><b>transitions</b> within the<br>MG or shallow soils:<br><br>Most likely identified<br>sources/compounds:<br><b>Tipped materials</b><br><b>Compound MG</b><br><b>Imported TS</b> | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) | Minor                                             | Low      | Negligible | <b>No source identified.</b><br><br>Although unlikely to be anything other<br>than inert, the tipped material is yet to be<br>fully assessed. However, this material is<br>likely to be either be removed from Site<br>or redistributed and used within the<br>development, which comprises a total<br>hard surfacing thereby rendering any<br>pathway blocked. Therefore, negligible<br>risk is assumed.<br><br>No evidence of toxic substances within<br>the surface materials across the Site. | No                | Negligible      | None required.                         | None             |
|                                                                                                                                                                                                                                                     |                                                       | Dust inhalation                      | Minor                                             | Low      | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Vapour inhalation                    |                                                   |          | NR         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Vapour inhalation                    |                                                   |          | NR         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Controlled water<br>(surface)                         | Migration by surface<br>run-off      | Minor                                             | Low      | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | In-ground lateral<br>migration       | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Plants                                                | Root uptake                          | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
| <b>Onsite:</b><br>Toxic & phytotoxic<br>non-metals and<br>solvents within the MG<br>or shallow soils:<br><br>Most likely identified<br>sources/compounds:<br><b>Tipped materials</b><br><b>Compound MG</b><br><b>Imported TS</b>                    | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) | Minor                                             | Low      | Negligible | <b>No source identified.</b><br><br>Although unlikely to be anything other<br>than inert, the tipped material is yet to be<br>fully assessed. However, this material is<br>likely to be either be removed from Site<br>or redistributed and used within the<br>development, which comprises a total<br>hard surfacing thereby rendering any<br>pathway blocked. Therefore, negligible<br>risk is assumed.<br><br>No evidence of toxic substances within<br>the surface materials across the Site. | No                | Negligible      | None required.                         | None             |
|                                                                                                                                                                                                                                                     |                                                       | Dust inhalation                      | Minor                                             | Low      | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Vapour inhalation                    | Minor                                             | Low      | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | Vapour inhalation                    | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Controlled water<br>(surface)                         | Migration by surface<br>run-off      | Minor                                             | Low      | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     |                                                       | In-ground lateral<br>migration       | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |
|                                                                                                                                                                                                                                                     | Plants                                                | Root uptake                          | Minor                                             | Unlikely | Negligible |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                                        |                  |

| Source<br>(Type and location)                                                                                                                                                                                                                                                                                           | Receptor                                        | Pathway                           | Initial Assessment from Desk Study Information |          |            | Proposed Investigation/Comments | Hazard Linkage | Revised Risk | Proposed Remediation /Management | Residual Risk |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------|------------------------------------------------|----------|------------|---------------------------------|----------------|--------------|----------------------------------|---------------|
|                                                                                                                                                                                                                                                                                                                         |                                                 |                                   | Severity                                       | Prob.    | Risk       |                                 |                |              |                                  |               |
| <b>Onsite:</b><br>Petroleum hydrocarbon compounds ( <b>TPH</b> ) (petrol, oil, diesel), Polyaromatic Hydrocarbons ( <b>PAH</b> ) (coal, clinker, coke) and associated volatile organic compounds ( <b>VOCs</b> ) within the MG or shallow soils.<br><br>Most likely identified compounds of:<br><b>None identified.</b> | Site workers (short-term/ acute exposure)       | Direct contact (ingestion/dermal) | Minor                                          | Unlikely | Negligible | <b>No source identified.</b>    | No             | Negligible   | None required.                   | None          |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Dust inhalation                   | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Vapour inhalation                 | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Future site users (long-term/ chronic exposure) | Direct contact (ingestion/dermal) | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Dust inhalation                   | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Vapour inhalation                 | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Controlled water (surface)                      | Migration by surface run-off      | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | In-ground lateral migration       | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Controlled water (aquifer)                      | In-ground vertical migration      | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Plants                                          | Root uptake                       | Minor                                          | Unlikely | Negligible |                                 |                |              |                                  |               |
| <b>Onsite:</b><br>Polychlorinated Biphenyls ( <b>PCBs</b> ) within Made Ground or shallow soils.<br><b>None identified.</b>                                                                                                                                                                                             | Site workers (short-term/ acute exposure)       | Direct contact (ingestion/dermal) |                                                |          | NR         | <b>No source identified.</b>    | No             | Negligible   | None required.                   | None          |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Dust inhalation                   |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Vapour inhalation                 |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Future site users (long-term/ chronic exposure) | Direct contact (ingestion/dermal) |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Dust inhalation                   |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | Vapour inhalation                 |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Controlled water (surface)                      | Migration by surface run-off      |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         |                                                 | In-ground lateral migration       |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Controlled water (aquifer)                      | In-ground vertical migration      |                                                |          | NR         |                                 |                |              |                                  |               |
|                                                                                                                                                                                                                                                                                                                         | Plants                                          | Root uptake                       |                                                |          | NR         |                                 |                |              |                                  |               |

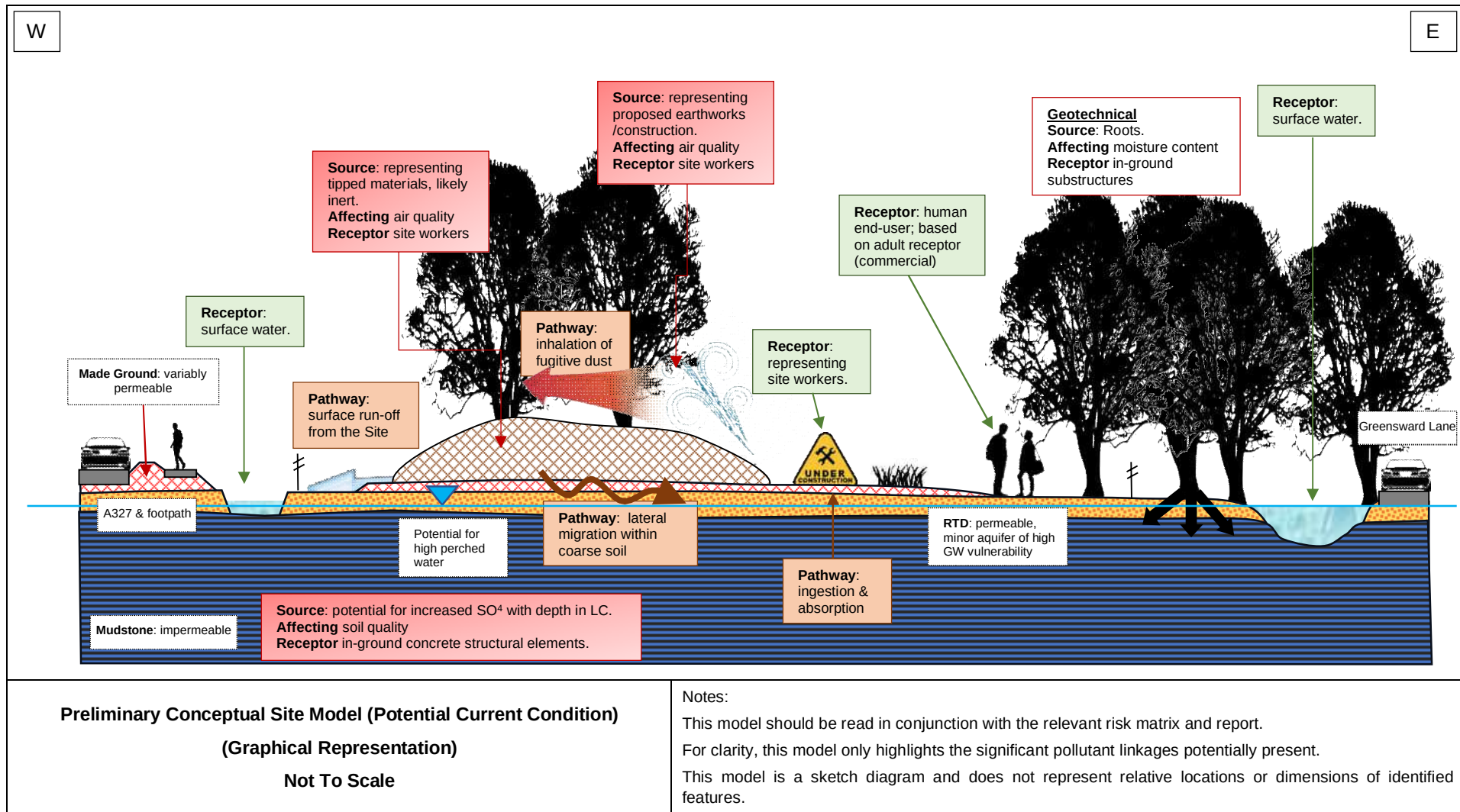
| Source<br>(Type and location)                                                                                              | Receptor                                        | Pathway                                              | Initial Assessment from Desk Study Information |          |            | Proposed Investigation/Comments                                                                                                                                                                                                          | Hazard Linkage | Revised Risk | Proposed Remediation /Management                            | Residual Risk |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------|------------------------------------------------|----------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|-------------------------------------------------------------|---------------|
|                                                                                                                            |                                                 |                                                      | Severity                                       | Prob.    | Risk       |                                                                                                                                                                                                                                          |                |              |                                                             |               |
| <b>Onsite:</b><br>Ground gas.<br><b>None identified.</b>                                                                   | Site workers (short-term/ acute exposure)       | Vapour inhalation                                    | Minor                                          | Unlikely | Negligible | No source of ground gas identified onsite that could constitute a significant risk of significant harm to any on-site receptor.                                                                                                          | No             | Negligible   | None required.                                              | None          |
|                                                                                                                            | Future site users (long-term/ chronic exposure) | Vapour inhalation                                    | Minor                                          | Unlikely | Negligible |                                                                                                                                                                                                                                          |                |              |                                                             |               |
| <b>Onsite:</b><br>Residual <b>asbestos</b> from previous structures near or at surface.<br><b>None identified.</b>         | Site workers (short-term/ acute exposure)       | Inhalation of fugitive dust                          | Minor                                          | Low      | Negligible | <b>No source identified.</b>                                                                                                                                                                                                             | No             | Negligible   | None required.                                              | None          |
|                                                                                                                            | Future site users (long-term/ chronic exposure) | Inhalation of fugitive dust                          | Minor                                          | Unlikely | Negligible |                                                                                                                                                                                                                                          |                |              |                                                             |               |
| <b>Onsite (Geotechnical):</b><br>Aggressive substances ( <b>pH, SO<sub>4</sub></b> conditions) within <u>Made Ground</u>   | In-ground utilities                             | Direct contact with utilities conduits.              | Minor                                          | Unlikely | Negligible | High acidity within the imported TS across the Site due to high organic content. However, material will be removed from area.                                                                                                            | No             | Negligible   | None required.                                              | None          |
|                                                                                                                            | Building substructure                           | Direct contact with in-ground construction materials | Minor                                          | Unlikely | Negligible |                                                                                                                                                                                                                                          |                |              |                                                             |               |
| <b>Onsite (Geotechnical):</b><br>Aggressive substances ( <b>pH, SO<sub>4</sub></b> conditions) <u>within natural soils</u> | In-ground utilities                             | Direct contact with utilities conduits.              | Mild                                           | Low      | Low        | Although the underlying LC was determined to be DC-1, only the top on the unit was tested. LC known to contact selenite in some beds therefore sulphate like to increase with depth.<br><b>Recommend</b> further testing or assume DC-2. | Potentially    | Low          | Recommend further testing or assume DC-2 as a preventative. | Negligible    |
|                                                                                                                            | Building substructure                           | Direct contact with in-ground construction materials | Mild                                           | Low      | Low        |                                                                                                                                                                                                                                          |                |              |                                                             |               |

| Source<br>(Type and location)                                                                                                                                                                | Receptor                                              | Pathway                              | Initial Assessment from<br>Desk Study Information |          |            | Proposed Investigation/Comments | Hazard<br>Linkage | Revised<br>Risk | Proposed<br>Remediation /<br>Management | Residual<br>Risk |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------|---------------------------------------------------|----------|------------|---------------------------------|-------------------|-----------------|-----------------------------------------|------------------|
|                                                                                                                                                                                              |                                                       |                                      | Severity                                          | Prob.    | Risk       |                                 |                   |                 |                                         |                  |
| <b>Offsite:</b><br>Toxic & phytotoxic<br><b>heavy metals</b> and<br><b>transitions</b> migrating<br>to Site from offsite<br>historical /current<br>processes.<br><br><b>None identified.</b> | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible | <b>No source identified.</b>    | No                | Negligible      | None required.                          | None             |
|                                                                                                                                                                                              |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Vapour inhalation                    |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Vapour inhalation                    |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Controlled water<br>(surface)                         | Migration by surface<br>run-off      |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | In-ground lateral<br>migration       |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
| <b>Offsite:</b><br>Toxic & phytotoxic<br><b>non-metals</b> and<br><b>solvents</b> migrating to<br>Site from offsite<br>historical/current<br>processes.<br><br><b>None identified.</b>       | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible | <b>No source identified.</b>    | No                | Negligible      | None required.                          | None             |
|                                                                                                                                                                                              |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Vapour inhalation                    | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Dust inhalation                      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | Vapour inhalation                    | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Controlled water<br>(surface)                         | Migration by surface<br>run-off      |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       | In-ground lateral<br>migration       |                                                   |          | NR         |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              | Plants                                                | Root uptake                          | Minor                                             | Unlikely | Negligible |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                              |                                                       |                                      |                                                   |          |            |                                 |                   |                 |                                         |                  |

| Source<br>(Type and location)                                                                                                                                                                                                                                                                                                                      | Receptor                                              | Pathway                              | Initial Assessment from<br>Desk Study Information |       |      | Proposed Investigation/Comments | Hazard<br>Linkage | Revised<br>Risk | Proposed<br>Remediation /<br>Management | Residual<br>Risk |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------|---------------------------------------------------|-------|------|---------------------------------|-------------------|-----------------|-----------------------------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                    |                                                       |                                      | Severity                                          | Prob. | Risk |                                 |                   |                 |                                         |                  |
| <b>Offsite:</b><br>Petroleum<br>hydrocarbons ( <b>TPH</b> )<br>(petrol, oil, diesel),<br>Poly Aromatic<br>Hydrocarbons ( <b>PAHs</b> )<br>(coal, clinker, coke,<br>tar) and associated<br>volatile organic<br>compounds ( <b>VOCs</b> )<br>within the Made<br>Ground or shallow<br>soils from offsite<br>processes.<br><br><b>None identified.</b> | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) |                                                   |       | NR   | <b>No source identified.</b>    | No                | NR              | None required.                          | None             |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Dust inhalation                      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Vapour inhalation                    |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Dust inhalation                      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Vapour inhalation                    |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Controlled water<br>(surface)                         | Migration by surface<br>run-off      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | In-ground lateral<br>migration       |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
| <b>Offsite:</b><br>Polychlorinated<br>Biphenyls ( <b>PCBs</b> )<br>from adjacent site<br>locations within MG or<br>shallow soils.<br><br><b>None identified.</b>                                                                                                                                                                                   | Site workers<br>(short-term/ acute<br>exposure)       | Direct contact<br>(ingestion/dermal) |                                                   |       | NR   | <b>No source identified.</b>    | No                | NR              | None required.                          | None             |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Dust inhalation                      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Vapour inhalation                    |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Future site users<br>(long-term/<br>chronic exposure) | Direct contact<br>(ingestion/dermal) |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Dust inhalation                      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | Vapour inhalation                    |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Controlled water<br>(surface)                         | Migration by surface<br>run-off      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    |                                                       | In-ground lateral<br>migration       |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Controlled water<br>(aquifer)                         | In-ground vertical<br>migration      |                                                   |       | NR   |                                 |                   |                 |                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                    | Plants                                                | Root uptake                          |                                                   |       | NR   |                                 |                   |                 |                                         |                  |

MG: Made Ground  
TS: Topsoil  
NR: No risk (missing element from S-P-R model)





## 8.2. Requirement for Further Assessment

During works there is potential for fugitive dust to be blown from the soil surface, particularly under dry and windy weather conditions. Although proven uncontaminated or toxic, fugitive dust can impact on general wellbeing and is at best, a nuisance. Therefore, dampening of exposed soils should be undertaken throughout all works phases as a courtesy to the surrounding land users.

Of the areas investigated and laboratory testing undertaken, neither the results nor quantified risk assessment identified significant risk of significant harm to the receptors, however, a 'negligible' risk **does not mean that contamination or the impact of such will definitely be absent from the Site** (as outlined by the risk assessment matrix presented in [Appendix F](#)), and site workers should be mindful of this.

Only the top of the London Clay was sampled and tested due to collapsed dynamic sampler holes. London Clay is known to contain selenite-bearing beds. Although the testing undertaken resulted in a concrete class DC-1, sulphate may increase with depth. It is therefore recommended that either further testing be undertaken to establish adequate concrete class or assume DC-2 as a preventative measure.

Should any soils be revealed during enabling/construction works that are in any way different to those revealed during the ground investigation outlined in this report, then excavation must cease immediately, and samples must be taken for analysis by the PRP geotechnical engineer. This applies to the type of soils as well, as it may impact the foundation design. This may result in additional remedial measures being required on site before enabling/construction works can be continued. In the event that contamination is proven, consultation with the Contaminated Land Officer of the Local Planning Authority must be sought to establish an acceptable remediation strategy for which verification may be required.

## 9 OVERVIEW OF RECOMMENDATIONS

Based on the findings of the ground investigation at the Site, the following is recommended:

### 9.1. Geotechnical Constraints

The following is a brief synopsis of [Section 5](#).

Made Ground was detected across the Site, in the form of a soft, organic-rich imported Topsoil, which contained fine demolition debris and straw mixed within, recorded to depths of between 0.2m and 0.90mbegl. In some places, a thin layer of demolition crush was encountered at the base of this soft ground, a remnant of the former construction compound.

It should be noted that the imported Topsoil across the Site has no engineered capacity and can be used only for soft landscaping areas, of which, none are presented on the proposed site plan shown in [Appendix A](#).

The natural River Terrace Deposits (RTD) were recorded as a variable gravelly, clayey SAND of substantial strength, interbedded with weaker clay or silt dominated material, which often exhibited running behaviour. This material was recorded to extend across the entire Site, which contradicts the BGS records, which indicates RTD restricted to the northwest corner, however, BGS stratal boundaries are only indicative based on the information they possess at the time of mapping.

The underlying bedrock, London Clay was recorded in three boreholes from depths of between 2.6m and 2.8mbegl as a very soft silty CLAY, however, advancement of the dynamic sampling was curtailed by hole collapse due to saturated soils in all location. As a result, dynamic probing was undertaken to depths of between 5m and 6mbegl, interpretation of which indicated the top of the London Clay from between 2.2m and 3.1mbegl also as a very soft material, however it also indicated an increase in strength with depth ([Section 5.1](#)).

LC presented with medium volume change potential with variation in moisture content. This may impact units close to the northern (hawthorn) and eastern (various deciduous) boundaries where part of the structures may be within root influence zones. However, due to the saturated nature of the soils, no dewatering process was evident, however, this may change once the Site has been drained ([Section 5.1](#)).

Additional to ground saturation, there were many areas of ponding at surface. Further water strikes were recorded at between 0.9m and 2.2mbegl, which rose to between 0.18m and 1.5mbegl on removal of casing ([Section 4.1](#)), prohibiting the use of soakaways for surface water drainage. The flora across the ponded areas indicates that near-surface or at surface water is at least a common occurrence. Swales have been constructed in the wider area and a drainage ditch is located to the northwest of the Site entrance. **It is recommended that appropriate drainage feasibility and design be undertaken** ([Section 5.3](#)).

As discussed in [Section 5.4](#), **ground improvement is recommended** for the footprint of the proposed structures, which must be compatible with the high soil water content. It is likely that the

most efficient form would be VSC to depths of around 6mbegl with deepening likely to be required for Units 4 - 6. PRP has reached out to Vibro Menard for a feasibility assessment, their extensive response is included within [Section 5.4](#), where **they recommend further investigation by CPT**, albeit that the dynamic probing proved increase in strength with depth.

[Section 5.5](#) shows that DC-1 can be adopted for in-ground concrete structures within the natural soils, however, only the surface of the London Clay was tested. It is likely that sulphate content will increase with depth due to some beds within the LC known to contain selenite crystals, **therefore either further testing should be undertaken on samples recovered from within the London Clay or assumed DC-2 as a preventative method.**

As indicated in [Section 5.4](#), ground improvement is recommended, likely by VSC. Required bearing pressures for founding the portal frame structures will be in the region of 125kPa, with FoS, a minimum of 175kPa should be sought through ground strengthening ([Section 5.6](#)). On completion of the ground improvement works, pad foundations should be founded at 1mbegl.

Once the Topsoil (Made Ground) has been stripped from the development areas, the underlying RTD sands and gravels are of adequate strength to support ground bearing slabs. Commercial ground floor slabs should be constructed as ground bearing and designed in accordance with TR34. It is **recommended that plate bearing tests be undertaken on the proof-rolled formation, post-groundworks, to determine the value for the Modulus of Sub-grade Reaction, k.** This can only be undertaken after the sub-formation has been exposed, and only once preparatory groundworks (reprofiling and ground improvement) have been completed ([Section 5.7](#)).

With regards to the natural granular RTD, approximate CBR values of 40 can be adopted once the soft overburden has been removed ([Section 5.7](#)).

**Further assessment is recommended** as sample assessment was undertaken only to between 2m and 3mbegl, particularly in light of the likelihood for increased sulphates with depth in the London Clay, which may determine that in-ground concrete elements require DC-2. This will also allow for installation of groundwater monitoring stand pipes. However, as indicated above, with VSC founding will likely be at 1mbegl therefore within DC-1 tolerances.

## 9.2. Contamination

In line with the proposed development and of the area assessed, no exceedances were proven in accordance with the LQM/CIEH S4UL and Defra C4SL criteria as outlined in [Section 7.1](#).

It should however be noted that, although likely to be inert material, the tipped material along the northern boundary was not sampled due to unsafe accessibility.

No asbestos was identified in any of the samples submitted for laboratory testing. Therefore, no significant risk of significant harm to the critical human receptor or wider environmental receptors is considered to be present due to asbestos ([Section 7.2](#)).

No radon protection measures are required for this commercial development. Ground gas monitoring was not undertaken due to lack of apparent source and a CS-1 has been assumed ([Section 7.3](#)).

For arisings due for removal from Site, WAC testing indicated the imported Topsoil/Made Ground to be non-hazardous and the natural soils to be inert. Due to the limited testing regime, it is recommended that any material to be removed from Site should be stockpiled and further tested, which can be undertaken by the groundworks contractor as and when required. The resultant WAC certificates should then be supplied to the receiving party ([Section 7.4](#)).

During works fugitive dust may be produced from the soil surface, particularly under dry and windy weather conditions. Although not necessarily contaminated or toxic, fugitive dust can impact on general wellbeing and is at best, a nuisance. Therefore, dampening of exposed soils should be undertaken throughout all works phases as a courtesy to the surrounding land users.

In addition to the recommendations outlined above, should any soils be revealed during enabling/construction works that are different in any way to those revealed during the ground investigation outlined in this report, then excavation must cease immediately, and samples must be taken for analysis by PRP. This may result in remedial measures being required on site before enabling/construction works can continue, which must be priorly agreed with the Local Planning Authority ([Section 8.2](#)).

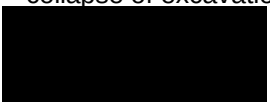
### 9.3. Health & Safety/General Measures to be Adopted During Works

Dampening of exposed soils should be undertaken during dry periods.

No excavation should be entered into unless the sides are appropriately supported (battened or temporary propping of the trench sides) in accordance with current best practice and as accepted by the Health and Safety Executive which is published in "Health and Safety in Construction (HSG 150)" which is available to download from [www.hse.gov.uk](http://www.hse.gov.uk). It is good practice that any excavation is not entered unless absolutely necessary.

The soils across the Site were saturated at the time of investigation, with many areas of surface ponding. Surface water collecting in excavations, as demonstrated with the collapsed dynamic sampler holes, will likely destabilise the bearing strata and any excavation sides. In these circumstances, and if appropriate surface water drainage measures are yet to be installed, should water be seen to sit within the excavations, the use of a small submersible pump should be sufficient to keep water levels sufficiently low to enable concrete or services to be placed in the excavations.

Inflows are to be expected in all excavations and dewatering techniques will likely be required at all times of the year. Therefore, temporary formwork to excavations may also be required to prevent the collapse of excavation sides; this will be particularly relevant during periods of rainfall.



Karen Holton, BSc, FGS, IOSH  
Senior Geotechnical Engineer

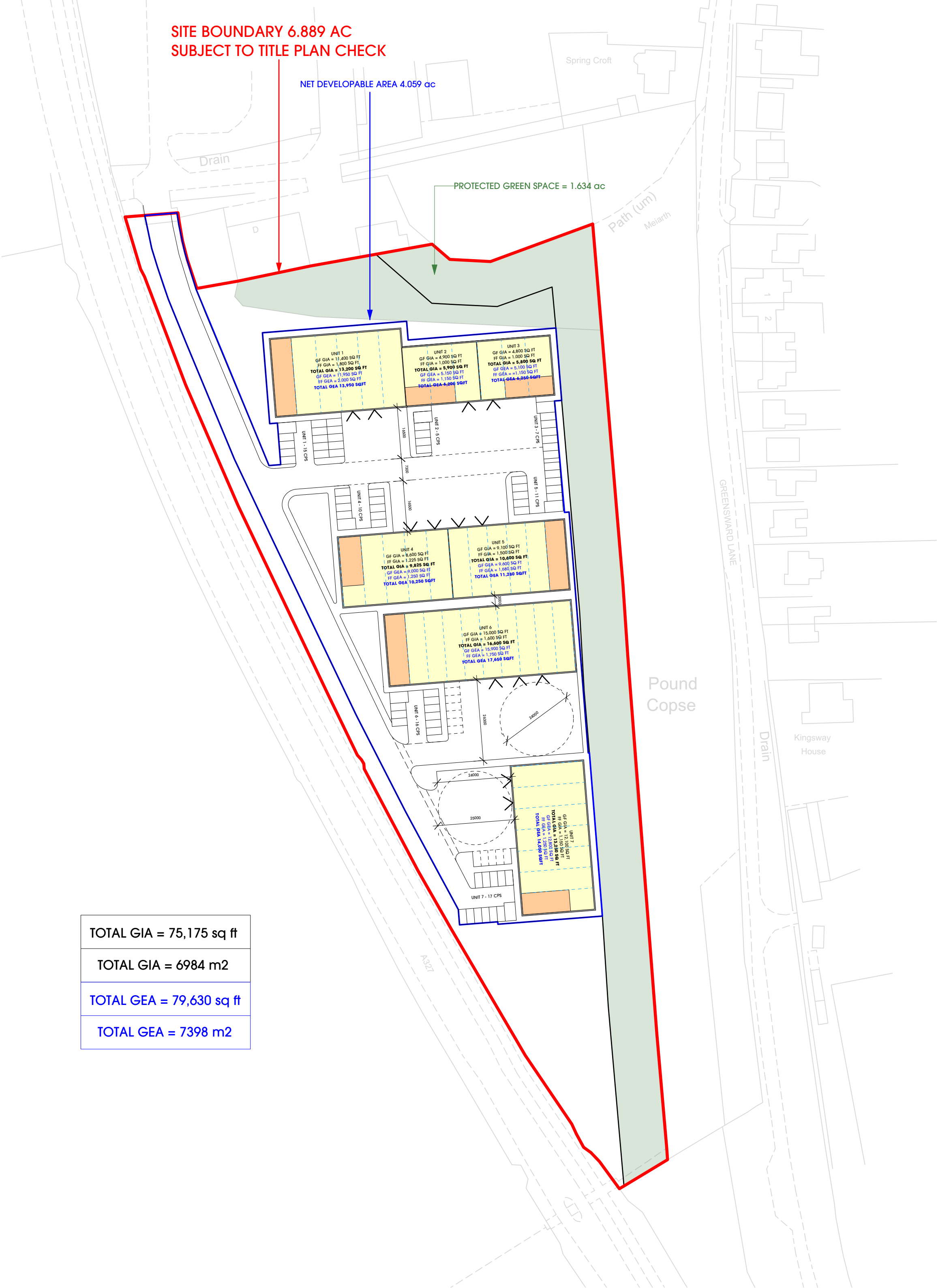


Barry Smith, B.Eng. C.Eng. M.I.Struct.E. FGS  
Director

## APPENDIX A

### Drawings

| Drawing Number: | Drawing Title:                                  |
|-----------------|-------------------------------------------------|
| 3389 F401 A     | Proposed Site Plan, HTC Architects, 14/02/2024. |
| 64065 SK02 P1   | Borehole Location Plan, PRP Engineers           |



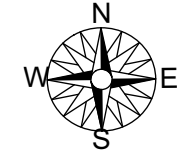
|                          |
|--------------------------|
| TOTAL GIA = 75,175 sq ft |
| TOTAL GIA = 6984 m2      |
| TOTAL GEA = 79,630 sq ft |
| TOTAL GEA = 7398 m2      |

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DO NOT SCALE!  
ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE  
WORK COMMENCES

BOUNDARY SUBJECT TO TITLE PLAN CHECK

SUBJECT TO REVIEW OF LEVELS AND FALLS



|      |          |                                               |       |
|------|----------|-----------------------------------------------|-------|
| Rev. | Date     | Description                                   | Drawn |
| C    | 28/02/24 | FF areas reduced                              | AB    |
| B    | 28/02/24 | GEA's added                                   | DE    |
| A    | 27/02/24 | Updated to show 3m gap between Unit 4/5 and 6 | DE    |

**htcarchitects**

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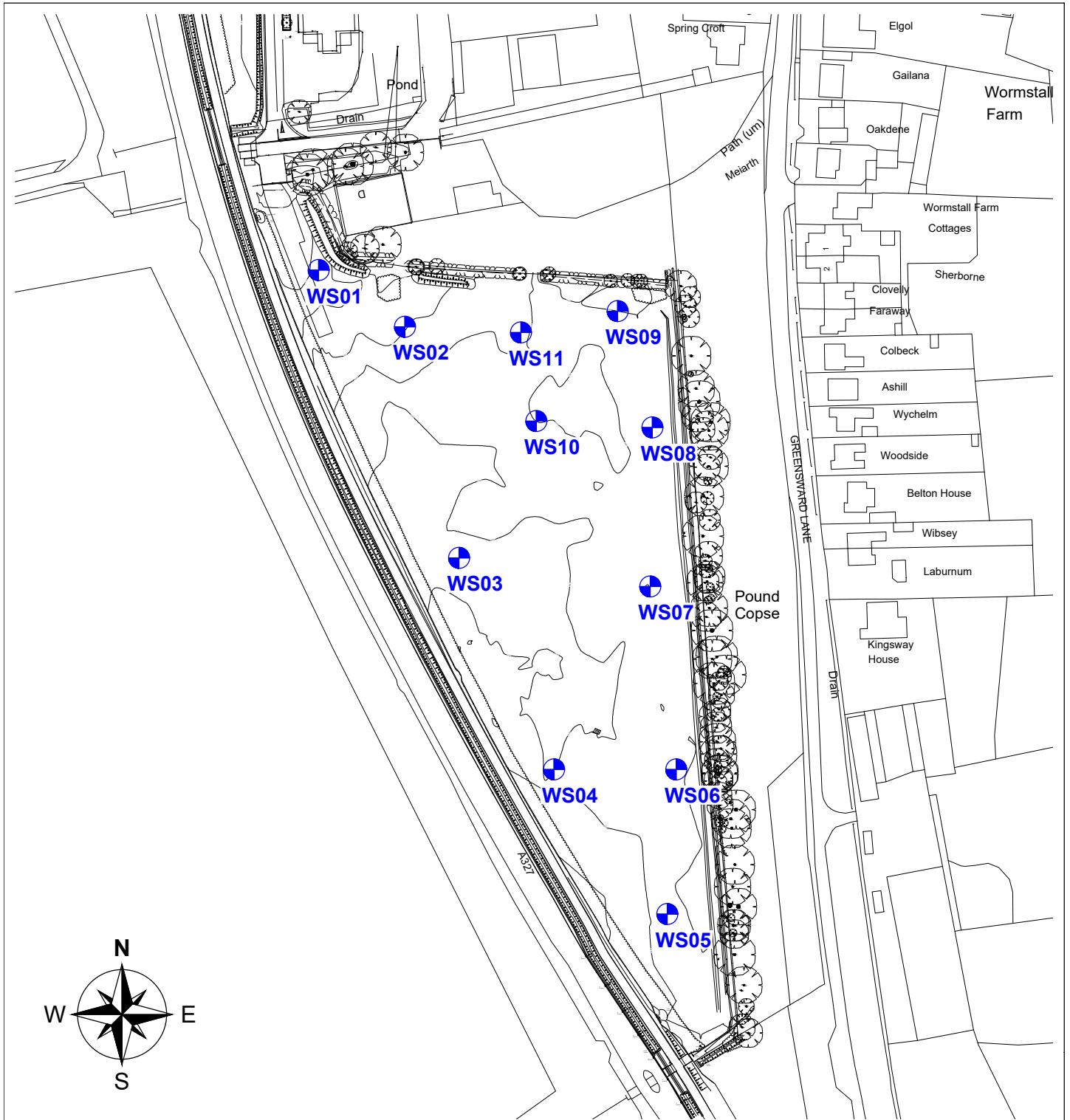
W: [www.htcarchitects.co.uk](http://www.htcarchitects.co.uk)  
E: [info@htcarchitects.co.uk](mailto:info@htcarchitects.co.uk)

client  
**Tungsten Properties**

project  
**Observer Park, Arborfield,  
Reading**

drawing title  
**Proposed Site Plan**

date **Feb 2024**  
status **Feasibility**  
scale **1:1000 @ A2**  
drawn **DE** checked **DW**  
job no. **3389** dwg no. **F403** rev. **C**



Project:

Observer Park, Reading

Title:

Borehole Location Plan

Status:

**PRELIMINARY**

Engineer: KH

Date: March 2024

Drawn: GF

Scales @ A4:

Checked: BMS

1:2000

Project No: 64065

Drg No: SK02

Rev: P1



**PRP**

consulting engineers & surveyors

**engineering excellence | creating advantage**

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## **APPENDIX B**

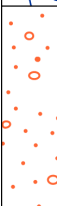
### **Engineer's Stratigraphic Logs**

|                                                                                                                                                                                                              |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|----------------|-----------------|-----------------|-----------|----|------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|
| PROJECT NAME:                                                                                                                                                                                                |                    | Observer Park          |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |  |              |
| SITE LOCATION:                                                                                                                                                                                               |                    | Arborfield, Reading    |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| CLIENT:                                                                                                                                                                                                      |                    | Carbide Properties Ltd |                |                 |                 |           |    |                                                                                    |                                                                 | JOB NO.:     |                                                                                                                                                                                                                                                                                        | 64065                                                                              |              |
| START DATE:                                                                                                                                                                                                  |                    | 26/03/2024             |                |                 |                 | EASTING:  |    |                                                                                    |                                                                 | 474934       |                                                                                                                                                                                                                                                                                        | BOREHOLE ID: WS01                                                                  |              |
| END DATE:                                                                                                                                                                                                    |                    | 26/03/2024             |                |                 |                 | NORTHING: |    |                                                                                    |                                                                 | 167317       |                                                                                                                                                                                                                                                                                        | TOTAL DEPTH: 3mbgl + DP to 6m                                                      |              |
| MEASURING POINT: Ground Level      DATUM ELEVATION (if available):                                                                                                                                           |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| Sample ID                                                                                                                                                                                                    | Laboratory Testing | In-Situ Testing        |                |                 |                 |           | GW | Legend                                                                             | Stratum Thickness                                               | Stratum Base | DESCRIPTION                                                                                                                                                                                                                                                                            | % Recovery                                                                         | Installation |
|                                                                                                                                                                                                              |                    | Test Type              | N Value /Blows | Hand Pen.       | DP              |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 0                                                                                                                                                                                                            | D1                 | WAC                    | SPTc           | 13              | 0.75/3/<br>0.25 | 0         | R1 |   | 0.20                                                            | 0.20         | Grass over firm, grey-brown clay backfill containing fragments of concrete and brick (fine to cobble) and gravel of flint and sandstone (fine to coarse, subangular to rounded), and abundant roots and rootlets.<br>MADE GROUND of large concrete and brick fragments in clay matrix. | U1<br>100%                                                                         |              |
| ES1<br>U1                                                                                                                                                                                                    | 0.10               |                        |                |                 |                 |           |    |                                                                                    | 0.30                                                            |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 0.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 1                                                                                                                                                                                                            |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 1.5                                                                                                                                                                                                          |                    |                        |                |                 | 1/1.25/<br>1.75 |           |    |                                                                                    | 1.70                                                            |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 2                                                                                                                                                                                                            |                    | MC/PI,<br>SO4/pH       | SPTc           | 5               |                 |           | E1 |  | 0.30                                                            | 2.00         | Soft, wet, olive, slightly silty, sandy CLAY (RIVER TERRACE DEPOSIT).                                                                                                                                                                                                                  | U3<br>60%                                                                          |              |
| 2.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    | 0.60                                                            |              | Loose, saturated and washed out (running), orange, slightly clayey, gravelly, medium grained SAND. Gravel of fine flint and coarse sandstone (RTD).                                                                                                                                    |                                                                                    |              |
| 3                                                                                                                                                                                                            | U3                 |                        |                |                 |                 |           |    |                                                                                    | 0.40                                                            | 3.00         | Very soft, wet, dark grey, slightly silty CLAY (LONDON CLAY FORMATION).                                                                                                                                                                                                                |                                                                                    |              |
| 3.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 4                                                                                                                                                                                                            |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 4.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 5                                                                                                                                                                                                            |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 5.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 6                                                                                                                                                                                                            |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| 6.5                                                                                                                                                                                                          |                    |                        |                |                 |                 |           |    |                                                                                    |                                                                 |              |                                                                                                                                                                                                                                                                                        |                                                                                    |              |
| OTHER COMMENTS:<br>Water encountered at 1.9m with 1m casing. At end of sampling, water at 1.6m which rose to 1.4m on removal of casing.<br>Hole collapsed at 2.4m with dynamic probing continuation from 3m. |                    |                        |                |                 |                 |           |    |                                                                                    | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |              | EQUIPMENT/MODALITY:<br>Archway Lite DS                                                                                                                                                                                                                                                 |                                                                                    |              |
| GW ENCOUNTERED:                                                                                                                                                                                              |                    | Y                      |                | GW INFLOW RATE: |                 | Seepage   |    | INSTALLATION:                                                                      |                                                                 | None         |                                                                                                                                                                                                                                                                                        | LOGGED: KLH      CHECKED: KLH                                                      |              |

| Date                  | 26/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number               | WS01     |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|-------------------------------|----------|
| Job Number            | 64065      |           |                           |    |    |    |    |                               | Comments |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                               |          |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    |                               |          |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                               |          |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                               |          |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                               |          |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                               |          |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                               |          |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                               |          |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                               |          |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                               |          |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                               |          |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    |                               |          |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                               |          |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                               |          |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                               |          |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    | Water at end (casing removed) |          |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    |                               |          |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                               |          |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                               |          |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    | Water strike                  |          |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                               |          |
| 2.0 - 2.1             |            | 2.0 - 2.1 |                           |    |    |    |    |                               |          |
| 2.1 - 2.2             |            | 2.1 - 2.2 |                           |    |    |    |    |                               |          |
| 2.2 - 2.3             |            | 2.2 - 2.3 |                           |    |    |    |    |                               |          |
| 2.3 - 2.4             |            | 2.3 - 2.4 |                           |    |    |    |    |                               |          |
| 2.4 - 2.5             |            | 2.4 - 2.5 |                           |    |    |    |    | BH Collapsed from             |          |
| 2.5 - 2.6             |            | 2.5 - 2.6 |                           |    |    |    |    |                               |          |
| 2.6 - 2.7             |            | 2.6 - 2.7 |                           |    |    |    |    | London Clay transition.       |          |
| 2.7 - 2.8             |            | 2.7 - 2.8 |                           |    |    |    |    |                               |          |
| 2.8 - 2.9             |            | 2.8 - 2.9 |                           |    |    |    |    |                               |          |
| 2.9 - 3.0             |            | 2.9 - 3.0 |                           |    |    |    |    |                               |          |
| 3.0 - 3.1             | 1          | 3.0 - 3.1 | <div></div>               |    |    |    |    |                               |          |
| 3.1 - 3.2             | 1          | 3.1 - 3.2 | <div></div>               |    |    |    |    |                               |          |
| 3.2 - 3.3             | 1          | 3.2 - 3.3 | <div></div>               |    |    |    |    |                               |          |
| 3.3 - 3.4             | 1          | 3.3 - 3.4 | <div></div>               |    |    |    |    |                               |          |
| 3.4 - 3.5             | 1          | 3.4 - 3.5 | <div></div>               |    |    |    |    |                               |          |
| 3.5 - 3.6             | 1          | 3.5 - 3.6 | <div></div>               |    |    |    |    |                               |          |
| 3.6 - 3.7             | 1          | 3.6 - 3.7 | <div></div>               |    |    |    |    |                               |          |
| 3.7 - 3.8             | 1          | 3.7 - 3.8 | <div></div>               |    |    |    |    |                               |          |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |    |    |    |                               |          |
| 3.9 - 4.0             | 1          | 3.9 - 4.0 | <div></div>               |    |    |    |    |                               |          |
| 4.0 - 4.1             | 2          | 4.0 - 4.1 | <div></div>               |    |    |    |    |                               |          |
| 4.1 - 4.2             | 2          | 4.1 - 4.2 | <div></div>               |    |    |    |    |                               |          |
| 4.2 - 4.3             | 2          | 4.2 - 4.3 | <div></div>               |    |    |    |    |                               |          |
| 4.3 - 4.4             | 2          | 4.3 - 4.4 | <div></div>               |    |    |    |    |                               |          |
| 4.4 - 4.5             | 3          | 4.4 - 4.5 | <div></div>               |    |    |    |    |                               |          |
| 4.5 - 4.6             | 4          | 4.5 - 4.6 | <div></div>               |    |    |    |    |                               |          |
| 4.6 - 4.7             | 3          | 4.6 - 4.7 | <div></div>               |    |    |    |    |                               |          |
| 4.7 - 4.8             | 5          | 4.7 - 4.8 | <div></div>               |    |    |    |    |                               |          |
| 4.8 - 4.9             | 5          | 4.8 - 4.9 | <div></div>               |    |    |    |    |                               |          |
| 4.9 - 5.0             | 5          | 4.9 - 5.0 | <div></div>               |    |    |    |    |                               |          |
| 5.0 - 5.1             | 5          | 5.0 - 5.1 | <div></div>               |    |    |    |    |                               |          |
| 5.1 - 5.2             | 5          | 5.1 - 5.2 | <div></div>               |    |    |    |    |                               |          |
| 5.2 - 5.3             | 5          | 5.2 - 5.3 | <div></div>               |    |    |    |    |                               |          |
| 5.3 - 5.4             | 6          | 5.3 - 5.4 | <div></div>               |    |    |    |    |                               |          |
| 5.4 - 5.5             | 6          | 5.4 - 5.5 | <div></div>               |    |    |    |    |                               |          |
| 5.5 - 5.6             | 5          | 5.5 - 5.6 | <div></div>               |    |    |    |    |                               |          |
| 5.6 - 5.7             | 6          | 5.6 - 5.7 | <div></div>               |    |    |    |    |                               |          |
| 5.7 - 5.8             | 6          | 5.7 - 5.8 | <div></div>               |    |    |    |    |                               |          |
| 5.8 - 5.9             | 7          | 5.8 - 5.9 | <div></div>               |    |    |    |    |                               |          |
| 5.9 - 6.0             | 7          | 5.9 - 6.0 | <div></div>               |    |    |    |    |                               |          |
| Remarks               |            |           |                           |    |    |    |    |                               |          |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                               |          |

|                                                                                                                                                                                         |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|----------------|-----------------|----|-----------|----|---------------|-------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                                                                                                                                                                           |                    | Observer Park          |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |  |              |                                 |  |                  |  |
| SITE LOCATION:                                                                                                                                                                          |                    | Arborfield, Reading    |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                                                                                                                                                                                 |                    | Carbide Properties Ltd |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                                                                                                                                                                             |                    | 26/03/2024             |                |                 |    | EASTING:  |    |               |                   | 474973                                          |                                                                                                                                                                                                                                                                                        |                                                                                    |              | BOREHOLE ID:                    |  | WS02             |  |
| END DATE:                                                                                                                                                                               |                    | 26/03/2024             |                |                 |    | NORTHING: |    |               |                   | 167279                                          |                                                                                                                                                                                                                                                                                        |                                                                                    |              | TOTAL DEPTH:                    |  | 3mbgl + DP to 6m |  |
| MEASURING POINT: Ground Level                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                                                                                                                                                                               | Laboratory Testing | In-Situ Testing        |                |                 |    |           | GW | Legend        | Stratum Thickness | Stratum Base                                    | DESCRIPTION                                                                                                                                                                                                                                                                            | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                                                                                                                                                                                         |                    | Test Type              | N Value /Blows | Hand Pen.       | DP |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 0                                                                                                                                                                                       | ES1                | Soil: env, asb         |                |                 |    |           |    |               |                   |                                                 | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Strong eutrophic (anoxic) odour and abundant roots and rootlets.                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 0.5                                                                                                                                                                                     | U1                 | MC, SO4/pH             |                |                 |    |           |    |               | 0.45              | 0.45                                            | MADE GROUND of soft, dark brown, slightly gravelly, organic-rich clay backfill with abundant roots and rootlets. Gravel of fine to medium, subrounded and fragmented flint. Medium-dense, orangish brown and green, slightly clayey, medium grained SAND. Occasional fine flint (RTD). | U1 90%                                                                             |              |                                 |  |                  |  |
|                                                                                                                                                                                         |                    |                        |                |                 |    |           |    |               | 0.25              | 0.70                                            |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
|                                                                                                                                                                                         |                    |                        |                |                 |    |           |    |               | 0.20              | 0.90                                            |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 1                                                                                                                                                                                       |                    |                        | SPTc           | 53              |    |           | R1 |               | 0.40              | 1.30                                            | Firm wet, olive and brown, slightly gravelly, sandy CLAY. Gravel of fine to coarse, rounded to subrounded flint (RTD).                                                                                                                                                                 |                                                                                    |              |                                 |  |                  |  |
| 1.5                                                                                                                                                                                     | U2                 | PSD                    |                |                 |    |           |    |               |                   |                                                 | Dense, saturated, orangish brown, clayey, slightly silty SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints. Flint nodules between 2.6 and 2.8m (RTD).                                                               | U2 90%                                                                             |              |                                 |  |                  |  |
| 2                                                                                                                                                                                       |                    |                        |                |                 |    |           | E1 |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 2.5                                                                                                                                                                                     |                    |                        | SPTc           | 45              |    |           |    |               | 1.70              |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    | U3 90%       |                                 |  |                  |  |
| 3                                                                                                                                                                                       |                    |                        |                |                 |    |           |    |               |                   | 3.00                                            |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 3.5                                                                                                                                                                                     |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 4                                                                                                                                                                                       |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 4.5                                                                                                                                                                                     |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 5                                                                                                                                                                                       |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 5.5                                                                                                                                                                                     |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 6                                                                                                                                                                                       |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| 6.5                                                                                                                                                                                     |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                                                                        |                                                                                    |              |                                 |  |                  |  |
| OTHER COMMENTS:                                                                                                                                                                         |                    |                        |                |                 |    |           |    |               |                   | IN SITU KEY:                                    |                                                                                                                                                                                                                                                                                        | EQUIPMENT/MODALITY:                                                                |              |                                 |  |                  |  |
| Water encountered at 1.7m with 1m casing. At end of sampling, water at 0.95m which rose to 0.8m on removal of casing. Hole collapsed at 1.9m with dynamic probing continuation from 3m. |                    |                        |                |                 |    |           |    |               |                   | SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |                                                                                                                                                                                                                                                                                        | Archway Lite DS                                                                    |              |                                 |  |                  |  |
| GW ENCOUNTERED:                                                                                                                                                                         |                    | Y                      |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION: |                   | None                                            |                                                                                                                                                                                                                                                                                        | LOGGED: KLH                                                                        |              | CHECKED: KLH                    |  |                  |  |

| Date                  | 26/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number               | WS02     |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|-------------------------------|----------|
| Job Number            | 64065      |           |                           |    |    |    |    |                               | Comments |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                               |          |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    | Water at end (casing removed) |          |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                               |          |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                               |          |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                               |          |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                               |          |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                               |          |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                               |          |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                               |          |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                               |          |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                               |          |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    |                               |          |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                               |          |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                               |          |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                               |          |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                               |          |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    |                               |          |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                               |          |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                               |          |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    |                               |          |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                               |          |
| 2.0 - 2.1             |            | 2.0 - 2.1 |                           |    |    |    |    |                               |          |
| 2.1 - 2.2             |            | 2.1 - 2.2 |                           |    |    |    |    |                               |          |
| 2.2 - 2.3             |            | 2.2 - 2.3 |                           |    |    |    |    |                               |          |
| 2.3 - 2.4             |            | 2.3 - 2.4 |                           |    |    |    |    |                               |          |
| 2.4 - 2.5             |            | 2.4 - 2.5 |                           |    |    |    |    |                               |          |
| 2.5 - 2.6             |            | 2.5 - 2.6 |                           |    |    |    |    |                               |          |
| 2.6 - 2.7             |            | 2.6 - 2.7 |                           |    |    |    |    |                               |          |
| 2.7 - 2.8             |            | 2.7 - 2.8 |                           |    |    |    |    |                               |          |
| 2.8 - 2.9             |            | 2.8 - 2.9 |                           |    |    |    |    |                               |          |
| 2.9 - 3.0             |            | 2.9 - 3.0 |                           |    |    |    |    |                               |          |
| 3.0 - 3.1             | 2          | 3.0 - 3.1 | <div></div>               |    |    |    |    |                               |          |
| 3.1 - 3.2             | 1          | 3.1 - 3.2 | <div></div>               |    |    |    |    |                               |          |
| 3.2 - 3.3             | 2          | 3.2 - 3.3 | <div></div>               |    |    |    |    |                               |          |
| 3.3 - 3.4             | 1          | 3.3 - 3.4 | <div></div>               |    |    |    |    |                               |          |
| 3.4 - 3.5             | 2          | 3.4 - 3.5 | <div></div>               |    |    |    |    |                               |          |
| 3.5 - 3.6             | 1          | 3.5 - 3.6 | <div></div>               |    |    |    |    |                               |          |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |    |    |    |                               |          |
| 3.7 - 3.8             | 2          | 3.7 - 3.8 | <div></div>               |    |    |    |    |                               |          |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |    |    |    |                               |          |
| 3.9 - 4.0             | 3          | 3.9 - 4.0 | <div></div>               |    |    |    |    |                               |          |
| 4.0 - 4.1             | 3          | 4.0 - 4.1 | <div></div>               |    |    |    |    |                               |          |
| 4.1 - 4.2             | 3          | 4.1 - 4.2 | <div></div>               |    |    |    |    |                               |          |
| 4.2 - 4.3             | 4          | 4.2 - 4.3 | <div></div>               |    |    |    |    |                               |          |
| 4.3 - 4.4             | 4          | 4.3 - 4.4 | <div></div>               |    |    |    |    |                               |          |
| 4.4 - 4.5             | 4          | 4.4 - 4.5 | <div></div>               |    |    |    |    |                               |          |
| 4.5 - 4.6             | 4          | 4.5 - 4.6 | <div></div>               |    |    |    |    |                               |          |
| 4.6 - 4.7             | 5          | 4.6 - 4.7 | <div></div>               |    |    |    |    |                               |          |
| 4.7 - 4.8             | 6          | 4.7 - 4.8 | <div></div>               |    |    |    |    |                               |          |
| 4.8 - 4.9             | 6          | 4.8 - 4.9 | <div></div>               |    |    |    |    |                               |          |
| 4.9 - 5.0             | 7          | 4.9 - 5.0 | <div></div>               |    |    |    |    |                               |          |
| 5.0 - 5.1             | 7          | 5.0 - 5.1 | <div></div>               |    |    |    |    |                               |          |
| 5.1 - 5.2             | 7          | 5.1 - 5.2 | <div></div>               |    |    |    |    |                               |          |
| 5.2 - 5.3             | 8          | 5.2 - 5.3 | <div></div>               |    |    |    |    |                               |          |
| 5.3 - 5.4             | 7          | 5.3 - 5.4 | <div></div>               |    |    |    |    |                               |          |
| 5.4 - 5.5             | 8          | 5.4 - 5.5 | <div></div>               |    |    |    |    |                               |          |
| 5.5 - 5.6             | 8          | 5.5 - 5.6 | <div></div>               |    |    |    |    |                               |          |
| 5.6 - 5.7             | 9          | 5.6 - 5.7 | <div></div>               |    |    |    |    |                               |          |
| 5.7 - 5.8             | 10         | 5.7 - 5.8 | <div></div>               |    |    |    |    |                               |          |
| 5.8 - 5.9             | 10         | 5.8 - 5.9 | <div></div>               |    |    |    |    |                               |          |
| 5.9 - 6.0             | 11         | 5.9 - 6.0 | <div></div>               |    |    |    |    |                               |          |
| Remarks               |            |           |                           |    |    |    |    |                               |          |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                               |          |

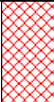
|                               |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
|-------------------------------|---------------------|------------------------|----------------|-----------|----|-----------|----|-------------------------------------------------------------------------------------|-------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                 |                     | Observer Park          |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |              |                                 |  |                  |  |
| SITE LOCATION:                |                     | Arborfield, Reading    |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                       |                     | Carbide Properties Ltd |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                   |                     | 25/03/2024             |                |           |    | EASTING:  |    |                                                                                     |                   | 474997       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              | BOREHOLE ID:                    |  | WS03             |  |
| END DATE:                     |                     | 25/03/2024             |                |           |    | NORTHING: |    |                                                                                     |                   | 167210       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              | TOTAL DEPTH:                    |  | 3mbgl + DP to 6m |  |
| MEASURING POINT: Ground Level |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                     | Laboratory Testing  | In-Situ Testing        |                |           |    |           | GW | Legend                                                                              | Stratum Thickness | Stratum Base | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                               |                     | Test Type              | N Value /Blows | Hand Pen. | DP |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 0                             |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| ES1<br>U1                     | Soil: env<br>SO4/pH |                        |                |           |    |           |    |    | 0.20              | 0.20         | Grass over saturated soft, dark brown, peaty clay backfill mixed with straw. Strong eutrophic (anoxic) odour and abundant roots and rootlets.<br>MADE GROUND of large concrete and brick fragments in clay matrix.<br>MADE GROUND of firm, dark brown, slightly sandy, slightly gravelly clay backfill mixed with straw and abundant roots and rootlets.<br>Gravel of coarse and cobbles of subrounded and fragmented flint and occasional brick fragment.<br>Firm, wet, orangish brown, slightly gravelly, sandy, silty CLAY.<br>Gravel of fine to coarse, subrounded, rounded and fragmented flints (RTD). | U1 90%                                                                             |              |                                 |  |                  |  |
|                               |                     |                        |                |           |    |           |    |                                                                                     | 0.10              | 0.30         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
|                               |                     |                        |                |           |    |           |    |                                                                                     | 0.15              | 0.45         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 0.5                           |                     |                        |                |           |    |           |    |    | 0.15              | 0.60         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 1                             | D1                  | WAC                    | SPTc           | 27        |    |           | E1 |    |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 1.5                           |                     |                        |                |           |    |           | R1 |   | 2.20              |              | Medium-dense to dense, saturated, orangish brown, slightly clayey, slightly silty SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD).                                                                                                                                                                                                                                                                                                                                                                                                | U2 80%                                                                             |              |                                 |  |                  |  |
| 2                             | U3                  | PSD,<br>SO4/pH         | SPTc           | 69        |    |           |    |  |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | U3 70%                                                                             |              |                                 |  |                  |  |
| 2.5                           |                     |                        |                |           |    |           |    |  |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 3                             | U3                  | MC/PI,<br>SO4/pH       |                |           |    |           |    |  | 2.80              |              | Very soft, wet, dark grey, slightly silty CLAY (LONDON CLAY FORMATION).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                    |              |                                 |  |                  |  |
| 3                             |                     |                        |                |           |    |           |    |  | 0.20              | 3.00         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 3.5                           |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 4                             |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 4.5                           |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 5                             |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 5.5                           |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 6                             |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 6.5                           |                     |                        |                |           |    |           |    |                                                                                     |                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |

|                                                                                                                                                                                                              |  |   |  |                                                                 |  |                                        |  |               |  |      |  |             |  |              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|-----------------------------------------------------------------|--|----------------------------------------|--|---------------|--|------|--|-------------|--|--------------|--|
| OTHER COMMENTS:<br>Water encountered at 0.9m with 2m casing. At end of sampling, water at 1.9m which rose to 1.5m on removal of casing.<br>Hole collapsed at 2.6m with dynamic probing continuation from 3m. |  |   |  | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |  | EQUIPMENT/MODALITY:<br>Archway Lite DS |  |               |  |      |  |             |  |              |  |
| GW ENCOUNTERED:                                                                                                                                                                                              |  | Y |  | GW INFLOW RATE:                                                 |  | Seepage                                |  | INSTALLATION: |  | None |  | LOGGED: KLH |  | CHECKED: KLH |  |

| Date                  | 25/03/2024 | Site:     | Observer Park, Arborfield |    |    | Borehole Number | WS03     |                                           |                               |
|-----------------------|------------|-----------|---------------------------|----|----|-----------------|----------|-------------------------------------------|-------------------------------|
| Job Number            | 64065      |           |                           |    |    |                 | Comments |                                           |                               |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20              | 25       |                                           |                               |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |                 |          | Water strike                              |                               |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |                 |          |                                           |                               |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |                 |          |                                           |                               |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |                 |          |                                           |                               |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |                 |          |                                           |                               |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |                 |          |                                           |                               |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |                 |          |                                           |                               |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |                 |          |                                           |                               |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |                 |          |                                           |                               |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |                 |          |                                           |                               |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |                 |          |                                           |                               |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |                 |          |                                           |                               |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |                 |          |                                           |                               |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |                 |          |                                           |                               |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |                 |          |                                           |                               |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |                 |          |                                           | Water at end (casing removed) |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |                 |          |                                           |                               |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |                 |          |                                           |                               |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |                 |          |                                           |                               |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |                 |          |                                           |                               |
| 2.0 - 2.1             |            | 2.0 - 2.1 |                           |    |    |                 |          |                                           |                               |
| 2.1 - 2.2             |            | 2.1 - 2.2 |                           |    |    |                 |          |                                           |                               |
| 2.2 - 2.3             |            | 2.2 - 2.3 |                           |    |    |                 |          |                                           |                               |
| 2.3 - 2.4             |            | 2.3 - 2.4 |                           |    |    |                 |          |                                           |                               |
| 2.4 - 2.5             |            | 2.4 - 2.5 |                           |    |    |                 |          |                                           |                               |
| 2.5 - 2.6             |            | 2.5 - 2.6 |                           |    |    |                 |          | BH Collapsed from London Clay transition. |                               |
| 2.6 - 2.7             |            | 2.6 - 2.7 |                           |    |    |                 |          |                                           |                               |
| 2.7 - 2.8             |            | 2.7 - 2.8 |                           |    |    |                 |          |                                           |                               |
| 2.8 - 2.9             |            | 2.8 - 2.9 |                           |    |    |                 |          |                                           |                               |
| 2.9 - 3.0             |            | 2.9 - 3.0 |                           |    |    |                 |          |                                           |                               |
| 3.0 - 3.1             | 1          | 3.0 - 3.1 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.1 - 3.2             | 1          | 3.1 - 3.2 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.2 - 3.3             | 1          | 3.2 - 3.3 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.3 - 3.4             | 1          | 3.3 - 3.4 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.4 - 3.5             | 2          | 3.4 - 3.5 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.5 - 3.6             | 1          | 3.5 - 3.6 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.7 - 3.8             | 2          | 3.7 - 3.8 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |    |                 |          |                                           |                               |
| 3.9 - 4.0             | 2          | 3.9 - 4.0 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.0 - 4.1             | 3          | 4.0 - 4.1 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.1 - 4.2             | 2          | 4.1 - 4.2 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.2 - 4.3             | 3          | 4.2 - 4.3 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.3 - 4.4             | 2          | 4.3 - 4.4 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.4 - 4.5             | 3          | 4.4 - 4.5 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.5 - 4.6             | 2          | 4.5 - 4.6 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.6 - 4.7             | 5          | 4.6 - 4.7 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.7 - 4.8             | 4          | 4.7 - 4.8 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.8 - 4.9             | 4          | 4.8 - 4.9 | <div></div>               |    |    |                 |          |                                           |                               |
| 4.9 - 5.0             | 5          | 4.9 - 5.0 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.0 - 5.1             | 5          | 5.0 - 5.1 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.1 - 5.2             | 4          | 5.1 - 5.2 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.2 - 5.3             | 5          | 5.2 - 5.3 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.3 - 5.4             | 6          | 5.3 - 5.4 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.4 - 5.5             | 5          | 5.4 - 5.5 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.5 - 5.6             | 4          | 5.5 - 5.6 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.6 - 5.7             | 5          | 5.6 - 5.7 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.7 - 5.8             | 5          | 5.7 - 5.8 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.8 - 5.9             | 4          | 5.8 - 5.9 | <div></div>               |    |    |                 |          |                                           |                               |
| 5.9 - 6.0             | 5          | 5.9 - 6.0 | <div></div>               |    |    |                 |          |                                           |                               |
| Remarks               |            |           |                           |    |    |                 |          |                                           |                               |
| Hammer Weight 63.5 kg |            |           |                           |    |    |                 |          |                                           |                               |

|                                                                                                                                                                                                               |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|----------------|-----------------|----|-----------|----|---------------|-------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|
| PROJECT NAME:                                                                                                                                                                                                 |                    | Observer Park          |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |  |              |
| SITE LOCATION:                                                                                                                                                                                                |                    | Arborfield, Reading    |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| CLIENT:                                                                                                                                                                                                       |                    | Carbide Properties Ltd |                |                 |    |           |    |               |                   | JOB NO.:                                                        |                                                                                                                                                                                               | 64065                                                                              |              |
| START DATE:                                                                                                                                                                                                   |                    | 25/03/2024             |                |                 |    | EASTING:  |    |               |                   | 475016                                                          |                                                                                                                                                                                               | BOREHOLE ID: WS04                                                                  |              |
| END DATE:                                                                                                                                                                                                     |                    | 25/03/2024             |                |                 |    | NORTHING: |    |               |                   | 167141                                                          |                                                                                                                                                                                               | TOTAL DEPTH: 2mbgl + DP to 6m                                                      |              |
| MEASURING POINT: Ground Level      DATUM ELEVATION (if available):                                                                                                                                            |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| Sample ID                                                                                                                                                                                                     | Laboratory Testing | In-Situ Testing        |                |                 |    |           | GW | Legend        | Stratum Thickness | Stratum Base                                                    | DESCRIPTION                                                                                                                                                                                   | % Recovery                                                                         | Installation |
|                                                                                                                                                                                                               |                    | Test Type              | N Value /Blows | Hand Pen.       | DP |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 0                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| D1                                                                                                                                                                                                            | WAC                |                        |                |                 |    |           |    |               | 0.50              |                                                                 | Grass over dark brown, organic-rich, peaty clay backfill with abundant roots and rootlets and occasional fine flint.                                                                          |                                                                                    |              |
| 0.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           | R1 |               | 0.50              |                                                                 |                                                                                                                                                                                               | U1 80%                                                                             |              |
| ES1                                                                                                                                                                                                           | Soil: BRE          |                        |                |                 |    |           |    |               | 0.40              |                                                                 | Firm, wet, orangish brown, slightly gravelly, sandy CLAY. Gravel of fine to coarse, subrounded, rounded and fragmented flints (RTD).                                                          |                                                                                    |              |
|                                                                                                                                                                                                               |                    |                        |                |                 |    |           |    |               | 0.90              |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 1                                                                                                                                                                                                             |                    | SPTc                   | 54             |                 |    |           | E1 |               | 0.80              |                                                                 | Dense, saturated, orangish brown, slightly silty, slightly clayey SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). | U2 90%                                                                             |              |
| 1.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               | 1.70              |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 2                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               | 0.30              |                                                                 | Soft, wet, yellowish brown, slightly sandy CLAY (RTD).                                                                                                                                        |                                                                                    |              |
|                                                                                                                                                                                                               |                    | SPTc                   | 6              |                 |    |           |    |               | 2.00              |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 2.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 3                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 3.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 4                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 4.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 5                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 5.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 6                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| 6.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |               |                   |                                                                 |                                                                                                                                                                                               |                                                                                    |              |
| OTHER COMMENTS:<br>Water encountered at 1.5m with 1m casing. At end of sampling, water at 0.7m which rose to 0.53m on removal of casing.<br>Hole collapsed at 1.6m with dynamic probing continuation from 2m. |                    |                        |                |                 |    |           |    |               |                   | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |                                                                                                                                                                                               | EQUIPMENT/MODALITY:<br>Archway Lite DS                                             |              |
| GW ENCOUNTERED:                                                                                                                                                                                               |                    | Y                      |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION: |                   | None                                                            |                                                                                                                                                                                               | LOGGED: KLH      CHECKED: KLH                                                      |              |

|                       |            |           |                           |    |    |    |    |                 |                                   |          |  |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|-----------------|-----------------------------------|----------|--|
| Date                  | 25/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number | WS04                              |          |  |
| Job Number            | 64065      |           |                           |    |    |    |    |                 |                                   | Comments |  |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                 |                                   |          |  |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    |                 | Water at end (casing removed)     |          |  |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                 |                                   |          |  |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                 |                                   |          |  |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                 |                                   |          |  |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                 |                                   |          |  |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                 |                                   |          |  |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                 |                                   |          |  |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                 |                                   |          |  |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                 |                                   |          |  |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                 |                                   |          |  |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    |                 | Water strike<br>BH Collapsed from |          |  |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                 |                                   |          |  |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                 |                                   |          |  |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                 |                                   |          |  |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                 |                                   |          |  |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    |                 |                                   |          |  |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                 |                                   |          |  |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                 |                                   |          |  |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    |                 |                                   |          |  |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                 |                                   |          |  |
| 2.0 - 2.1             | 3          | 2.0 - 2.1 | <div></div>               |    |    |    |    |                 | Likely London Clay transition.    |          |  |
| 2.1 - 2.2             | 3          | 2.1 - 2.2 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.2 - 2.3             | 2          | 2.2 - 2.3 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.3 - 2.4             | 2          | 2.3 - 2.4 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.4 - 2.5             | 2          | 2.4 - 2.5 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.5 - 2.6             | 5          | 2.5 - 2.6 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.6 - 2.7             | 5          | 2.6 - 2.7 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.7 - 2.8             | 3          | 2.7 - 2.8 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.8 - 2.9             | 2          | 2.8 - 2.9 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 2.9 - 3.0             | 3          | 2.9 - 3.0 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.0 - 3.1             | 3          | 3.0 - 3.1 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.1 - 3.2             | 3          | 3.1 - 3.2 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.2 - 3.3             | 3          | 3.2 - 3.3 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.3 - 3.4             | 3          | 3.3 - 3.4 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.4 - 3.5             | 2          | 3.4 - 3.5 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.5 - 3.6             | 3          | 3.5 - 3.6 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.7 - 3.8             | 3          | 3.7 - 3.8 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.8 - 3.9             | 3          | 3.8 - 3.9 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 3.9 - 4.0             | 4          | 3.9 - 4.0 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.0 - 4.1             | 4          | 4.0 - 4.1 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.1 - 4.2             | 3          | 4.1 - 4.2 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.2 - 4.3             | 4          | 4.2 - 4.3 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.3 - 4.4             | 3          | 4.3 - 4.4 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.4 - 4.5             | 4          | 4.4 - 4.5 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.5 - 4.6             | 3          | 4.5 - 4.6 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.6 - 4.7             | 4          | 4.6 - 4.7 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.7 - 4.8             | 4          | 4.7 - 4.8 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.8 - 4.9             | 3          | 4.8 - 4.9 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 4.9 - 5.0             | 5          | 4.9 - 5.0 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.0 - 5.1             | 5          | 5.0 - 5.1 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.1 - 5.2             | 4          | 5.1 - 5.2 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.2 - 5.3             | 5          | 5.2 - 5.3 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.3 - 5.4             | 5          | 5.3 - 5.4 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.4 - 5.5             | 5          | 5.4 - 5.5 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.5 - 5.6             | 5          | 5.5 - 5.6 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.6 - 5.7             | 6          | 5.6 - 5.7 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.7 - 5.8             | 5          | 5.7 - 5.8 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.8 - 5.9             | 6          | 5.8 - 5.9 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| 5.9 - 6.0             | 6          | 5.9 - 6.0 | <div></div>               |    |    |    |    |                 |                                   |          |  |
| Remarks               |            |           |                           |    |    |    |    |                 |                                   |          |  |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                 |                                   |          |  |

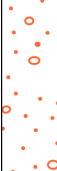
| PROJECT NAME:                                                      |                     | Observer Park          |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |  |  |
|--------------------------------------------------------------------|---------------------|------------------------|----------------|-----------|----|-----------|-----------------------------------------------------------------------------------|-------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------|--|
| SITE LOCATION:                                                     |                     | Arborfield, Reading    |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| CLIENT:                                                            |                     | Carbide Properties Ltd |                |           |    |           |                                                                                   |                   |              | JOB NO.:                                                                                                                                                                                              |            | 64065                                                                              |  |
| START DATE:                                                        |                     | 27/03/2024             |                |           |    | EASTING:  |                                                                                   | 175056            |              | BOREHOLE ID:                                                                                                                                                                                          |            | WS05                                                                               |  |
| END DATE:                                                          |                     | 27/03/2024             |                |           |    | NORTHING: |                                                                                   | 167108            |              | TOTAL DEPTH:                                                                                                                                                                                          |            | 2mbgl + DP to 5m                                                                   |  |
| MEASURING POINT: Ground Level      DATUM ELEVATION (if available): |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| Sample ID                                                          | Laboratory Testing  | In-Situ Testing        |                |           |    | GW        | Legend                                                                            | Stratum Thickness | Stratum Base | DESCRIPTION                                                                                                                                                                                           | % Recovery | Installation                                                                       |  |
|                                                                    |                     | Test Type              | N Value /Blows | Hand Pen. | DP |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 0                                                                  |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| ES1<br>U1                                                          | Soil: env<br>SO4/pH |                        |                |           |    | R1        |  | 0.45              | 0.45         | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Strong eutrophic (anoxic) odour and abundant roots and rootlets.                                               |            |                                                                                    |  |
| 0.5                                                                |                     |                        |                |           |    |           |  |                   |              |                                                                                                                                                                                                       | U1 90%     |                                                                                    |  |
| 1                                                                  | U2                  | PSD+,<br>SO4/pH        |                |           |    | E1        |                                                                                   | 1.55              |              | Loose to medium-dense, saturated, yellowish brown, slightly silty, clayey SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). |            |                                                                                    |  |
| 1.5                                                                |                     | SPTc                   | 20             |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       | U2 80%     |                                                                                    |  |
| 2                                                                  |                     |                        |                |           |    |           |                                                                                   | 2.00              |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 2.5                                                                |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 3                                                                  |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 3.5                                                                |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 4                                                                  |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 4.5                                                                |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 5                                                                  |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 5.5                                                                |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 6                                                                  |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |
| 6.5                                                                |                     |                        |                |           |    |           |                                                                                   |                   |              |                                                                                                                                                                                                       |            |                                                                                    |  |

|                                                                                                                                                                                                              |  |   |  |                                                                 |  |                                        |  |               |  |      |  |             |  |              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|-----------------------------------------------------------------|--|----------------------------------------|--|---------------|--|------|--|-------------|--|--------------|--|
| OTHER COMMENTS:<br>Water encountered at 1m with 1m casing. At end of sampling, water at 0.45m which rose to 0.38m on removal of casing.<br>Hole collapsed at 1.4m with dynamic probing continuation from 2m. |  |   |  | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |  | EQUIPMENT/MODALITY:<br>Archway Lite DS |  |               |  |      |  |             |  |              |  |
| GW ENCOUNTERED:                                                                                                                                                                                              |  | Y |  | GW INFLOW RATE:                                                 |  | Seepage                                |  | INSTALLATION: |  | None |  | LOGGED: KLH |  | CHECKED: KLH |  |

| Date                  | 27/04/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number                | WS05     |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|--------------------------------|----------|
| Job Number            | 64065      |           |                           |    |    |    |    |                                | Comments |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                                |          |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    | Water at end (casing removed)  |          |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                                |          |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                                |          |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                                |          |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                                |          |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    | Water strike                   |          |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                                |          |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                                |          |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                                |          |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                                |          |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    | BH Collapsed from              |          |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                                |          |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                                |          |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                                |          |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                                |          |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    | Likely London Clay transition. |          |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                                |          |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                                |          |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    |                                |          |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                                |          |
| 2.0 - 2.1             | 8          | 2.0 - 2.1 |                           |    |    |    |    |                                |          |
| 2.1 - 2.2             | 8          | 2.1 - 2.2 |                           |    |    |    |    |                                |          |
| 2.2 - 2.3             | 4          | 2.2 - 2.3 |                           |    |    |    |    |                                |          |
| 2.3 - 2.4             | 2          | 2.3 - 2.4 |                           |    |    |    |    |                                |          |
| 2.4 - 2.5             | 1          | 2.4 - 2.5 |                           |    |    |    |    |                                |          |
| 2.5 - 2.6             | 1          | 2.5 - 2.6 |                           |    |    |    |    |                                |          |
| 2.6 - 2.7             | 1          | 2.6 - 2.7 |                           |    |    |    |    |                                |          |
| 2.7 - 2.8             | 1          | 2.7 - 2.8 |                           |    |    |    |    |                                |          |
| 2.8 - 2.9             | 2          | 2.8 - 2.9 |                           |    |    |    |    |                                |          |
| 2.9 - 3.0             | 3          | 2.9 - 3.0 |                           |    |    |    |    |                                |          |
| 3.0 - 3.1             | 2          | 3.0 - 3.1 |                           |    |    |    |    |                                |          |
| 3.1 - 3.2             | 3          | 3.1 - 3.2 |                           |    |    |    |    |                                |          |
| 3.2 - 3.3             | 4          | 3.2 - 3.3 |                           |    |    |    |    |                                |          |
| 3.3 - 3.4             | 4          | 3.3 - 3.4 |                           |    |    |    |    |                                |          |
| 3.4 - 3.5             | 4          | 3.4 - 3.5 |                           |    |    |    |    |                                |          |
| 3.5 - 3.6             | 4          | 3.5 - 3.6 |                           |    |    |    |    |                                |          |
| 3.6 - 3.7             | 5          | 3.6 - 3.7 |                           |    |    |    |    |                                |          |
| 3.7 - 3.8             | 5          | 3.7 - 3.8 |                           |    |    |    |    |                                |          |
| 3.8 - 3.9             | 5          | 3.8 - 3.9 |                           |    |    |    |    |                                |          |
| 3.9 - 4.0             | 6          | 3.9 - 4.0 |                           |    |    |    |    |                                |          |
| 4.0 - 4.1             | 6          | 4.0 - 4.1 |                           |    |    |    |    |                                |          |
| 4.1 - 4.2             | 5          | 4.1 - 4.2 |                           |    |    |    |    |                                |          |
| 4.2 - 4.3             | 6          | 4.2 - 4.3 |                           |    |    |    |    |                                |          |
| 4.3 - 4.4             | 6          | 4.3 - 4.4 |                           |    |    |    |    |                                |          |
| 4.4 - 4.5             | 7          | 4.4 - 4.5 |                           |    |    |    |    |                                |          |
| 4.5 - 4.6             | 7          | 4.5 - 4.6 |                           |    |    |    |    |                                |          |
| 4.6 - 4.7             | 7          | 4.6 - 4.7 |                           |    |    |    |    |                                |          |
| 4.7 - 4.8             | 8          | 4.7 - 4.8 |                           |    |    |    |    |                                |          |
| 4.8 - 4.9             | 8          | 4.8 - 4.9 |                           |    |    |    |    |                                |          |
| 4.9 - 5.0             | 8          | 4.9 - 5.0 |                           |    |    |    |    |                                |          |
| 5.0 - 5.1             |            | 5.0 - 5.1 |                           |    |    |    |    |                                |          |
| 5.1 - 5.2             |            | 5.1 - 5.2 |                           |    |    |    |    |                                |          |
| 5.2 - 5.3             |            | 5.2 - 5.3 |                           |    |    |    |    |                                |          |
| 5.3 - 5.4             |            | 5.3 - 5.4 |                           |    |    |    |    |                                |          |
| 5.4 - 5.5             |            | 5.4 - 5.5 |                           |    |    |    |    |                                |          |
| 5.5 - 5.6             |            | 5.5 - 5.6 |                           |    |    |    |    |                                |          |
| 5.6 - 5.7             |            | 5.6 - 5.7 |                           |    |    |    |    |                                |          |
| 5.7 - 5.8             |            | 5.7 - 5.8 |                           |    |    |    |    |                                |          |
| 5.8 - 5.9             |            | 5.8 - 5.9 |                           |    |    |    |    |                                |          |
| 5.9 - 6.0             |            | 5.9 - 6.0 |                           |    |    |    |    |                                |          |
| Remarks               |            |           |                           |    |    |    |    |                                |          |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                                |          |

|                                                                                                                                                                                                                |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|----------------|-----------------|----|-----------|----|-----------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                                                                                                                                                                                                  |                       | Observer Park          |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |  |              |                                 |  |                  |  |
| SITE LOCATION:                                                                                                                                                                                                 |                       | Arborfield, Reading    |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                                                                                                                                                                                                        |                       | Carbide Properties Ltd |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                                                                                                                                                                                                    |                       | 27/03/2024             |                |                 |    | EASTING:  |    |                                                                                   |                   | 475062                                                                                                                                                                                      |                                                                                                                                                         |                                                                                    |              | BOREHOLE ID:                    |  | WS06             |  |
| END DATE:                                                                                                                                                                                                      |                       | 27/03/2024             |                |                 |    | NORTHING: |    |                                                                                   |                   | 167141                                                                                                                                                                                      |                                                                                                                                                         |                                                                                    |              | TOTAL DEPTH:                    |  | 3mbgl + DP to 6m |  |
| MEASURING POINT: Ground Level                                                                                                                                                                                  |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                                                                                                                                                                                                      | Laboratory Testing    | In-Situ Testing        |                |                 |    |           | GW | Legend                                                                            | Stratum Thickness | Stratum Base                                                                                                                                                                                | DESCRIPTION                                                                                                                                             | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                                                                                                                                                                                                                |                       | Test Type              | N Value /Blows | Hand Pen.       | DP |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 0                                                                                                                                                                                                              | ES1<br>Soil: env, BRE | SPTc                   | 16             |                 |    |           | R1 |  | 0.40              | 0.40                                                                                                                                                                                        | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Strong eutrophic (anoxic) odour and abundant roots and rootlets. | U1 90%                                                                             |              |                                 |  |                  |  |
| 0.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   | 0.80              | Loose to medium-dense, saturated, orangish brown, clayey, silty SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 1                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   | 1.20              |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 1.5                                                                                                                                                                                                            |                       | SPTc                   | 40             |                 |    |           | E1 |  | 0.55              | 1.75                                                                                                                                                                                        | Firm, wet, olive and orangish brown, slightly gravelly, slightly sandy, silty CLAY. Gravel of fine to coarse, rounded to subrounded flint (RTD).        | U2 90%                                                                             |              |                                 |  |                  |  |
| 2                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   | 1.25              | Medium-dense to dense, saturated, orangish brown, clayey, silty SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 2.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   | 3.00              |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 3                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 3.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 4                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 4.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 5                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 5.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 6                                                                                                                                                                                                              |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 6.5                                                                                                                                                                                                            |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
|                                                                                                                                                                                                                |                       |                        |                |                 |    |           |    |                                                                                   |                   |                                                                                                                                                                                             |                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| OTHER COMMENTS:<br>Water encountered at 1.6m with 1m casing. At end of sampling, water at 0.38m which rose to 0.18m on removal of casing.<br>Hole collapsed at 1.9m with dynamic probing continuation from 3m. |                       |                        |                |                 |    |           |    |                                                                                   |                   | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head)                                                                                                                             |                                                                                                                                                         | EQUIPMENT/MODALITY:<br>Archway Lite DS                                             |              |                                 |  |                  |  |
| GW ENCOUNTERED:                                                                                                                                                                                                |                       | Y                      |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION:                                                                     |                   | None                                                                                                                                                                                        |                                                                                                                                                         | LOGGED: KLH                                                                        |              | CHECKED: KLH                    |  |                  |  |

| Date                  | 27/04/2024 | Site:     | Observer Park, Arborfield |    |    |    | Borehole Number | WS06                           |
|-----------------------|------------|-----------|---------------------------|----|----|----|-----------------|--------------------------------|
| Job Number            | 64065      |           |                           |    |    |    |                 |                                |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25              | Comments                       |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |                 | Water at end (casing removed)  |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |                 |                                |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |                 |                                |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |                 |                                |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |                 |                                |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |                 |                                |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |                 |                                |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |                 |                                |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |                 |                                |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |                 |                                |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |                 | Water strike                   |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |                 |                                |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |                 |                                |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |                 |                                |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |                 |                                |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |                 |                                |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |                 |                                |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |                 |                                |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |                 |                                |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |                 |                                |
| 2.0 - 2.1             |            | 2.0 - 2.1 |                           |    |    |    |                 |                                |
| 2.1 - 2.2             |            | 2.1 - 2.2 |                           |    |    |    |                 |                                |
| 2.2 - 2.3             |            | 2.2 - 2.3 |                           |    |    |    |                 |                                |
| 2.3 - 2.4             |            | 2.3 - 2.4 |                           |    |    |    |                 |                                |
| 2.4 - 2.5             |            | 2.4 - 2.5 |                           |    |    |    |                 |                                |
| 2.5 - 2.6             |            | 2.5 - 2.6 |                           |    |    |    |                 |                                |
| 2.6 - 2.7             |            | 2.6 - 2.7 |                           |    |    |    |                 |                                |
| 2.7 - 2.8             |            | 2.7 - 2.8 |                           |    |    |    |                 |                                |
| 2.8 - 2.9             |            | 2.8 - 2.9 |                           |    |    |    |                 | Likely London Clay transition. |
| 2.9 - 3.0             |            | 2.9 - 3.0 |                           |    |    |    |                 |                                |
| 3.0 - 3.1             | 1          | 3.0 - 3.1 | <div></div>               |    |    |    |                 |                                |
| 3.1 - 3.2             | 1          | 3.1 - 3.2 | <div></div>               |    |    |    |                 |                                |
| 3.2 - 3.3             | 1          | 3.2 - 3.3 | <div></div>               |    |    |    |                 |                                |
| 3.3 - 3.4             | 2          | 3.3 - 3.4 | <div></div>               |    |    |    |                 |                                |
| 3.4 - 3.5             | 1          | 3.4 - 3.5 | <div></div>               |    |    |    |                 |                                |
| 3.5 - 3.6             | 1          | 3.5 - 3.6 | <div></div>               |    |    |    |                 |                                |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |    |    |                 |                                |
| 3.7 - 3.8             | 2          | 3.7 - 3.8 | <div></div>               |    |    |    |                 |                                |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |    |    |                 |                                |
| 3.9 - 4.0             | 2          | 3.9 - 4.0 | <div></div>               |    |    |    |                 |                                |
| 4.0 - 4.1             | 3          | 4.0 - 4.1 | <div></div>               |    |    |    |                 |                                |
| 4.1 - 4.2             | 3          | 4.1 - 4.2 | <div></div>               |    |    |    |                 |                                |
| 4.2 - 4.3             | 3          | 4.2 - 4.3 | <div></div>               |    |    |    |                 |                                |
| 4.3 - 4.4             | 4          | 4.3 - 4.4 | <div></div>               |    |    |    |                 |                                |
| 4.4 - 4.5             | 4          | 4.4 - 4.5 | <div></div>               |    |    |    |                 |                                |
| 4.5 - 4.6             | 4          | 4.5 - 4.6 | <div></div>               |    |    |    |                 |                                |
| 4.6 - 4.7             | 5          | 4.6 - 4.7 | <div></div>               |    |    |    |                 |                                |
| 4.7 - 4.8             | 5          | 4.7 - 4.8 | <div></div>               |    |    |    |                 |                                |
| 4.8 - 4.9             | 6          | 4.8 - 4.9 | <div></div>               |    |    |    |                 |                                |
| 4.9 - 5.0             | 6          | 4.9 - 5.0 | <div></div>               |    |    |    |                 |                                |
| 5.0 - 5.1             | 7          | 5.0 - 5.1 | <div></div>               |    |    |    |                 |                                |
| 5.1 - 5.2             | 8          | 5.1 - 5.2 | <div></div>               |    |    |    |                 |                                |
| 5.2 - 5.3             | 8          | 5.2 - 5.3 | <div></div>               |    |    |    |                 |                                |
| 5.3 - 5.4             | 8          | 5.3 - 5.4 | <div></div>               |    |    |    |                 |                                |
| 5.4 - 5.5             | 9          | 5.4 - 5.5 | <div></div>               |    |    |    |                 |                                |
| 5.5 - 5.6             | 10         | 5.5 - 5.6 | <div></div>               |    |    |    |                 |                                |
| 5.6 - 5.7             | 11         | 5.6 - 5.7 | <div></div>               |    |    |    |                 |                                |
| 5.7 - 5.8             | 12         | 5.7 - 5.8 | <div></div>               |    |    |    |                 |                                |
| 5.8 - 5.9             | 12         | 5.8 - 5.9 | <div></div>               |    |    |    |                 |                                |
| 5.9 - 6.0             | 12         | 5.9 - 6.0 | <div></div>               |    |    |    |                 |                                |
| Remarks               |            |           |                           |    |    |    |                 |                                |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |                 |                                |

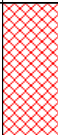
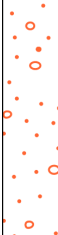
| PROJECT NAME:                                                      |                                          | Observer Park          |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |  |              |
|--------------------------------------------------------------------|------------------------------------------|------------------------|----------------|-----------|-----------------|-----------|----|------------------------------------------------------------------------------------|-------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|
| SITE LOCATION:                                                     |                                          | Arborfield, Reading    |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| CLIENT:                                                            |                                          | Carbide Properties Ltd |                |           |                 |           |    |                                                                                    |                   | JOB NO.:     |                                                                                                                                                                                                                  | 64065                                                                              |              |
| START DATE:                                                        |                                          | 25/03/2024             |                |           |                 | EASTING:  |    |                                                                                    |                   | 475050       |                                                                                                                                                                                                                  | BOREHOLE ID: WS07                                                                  |              |
| END DATE:                                                          |                                          | 25/03/2024             |                |           |                 | NORTHING: |    |                                                                                    |                   | 167190       |                                                                                                                                                                                                                  | TOTAL DEPTH: 3mbgl + DP to 5m                                                      |              |
| MEASURING POINT: Ground Level      DATUM ELEVATION (if available): |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| Sample ID                                                          | Laboratory Testing                       | In-Situ Testing        |                |           |                 |           | GW | Legend                                                                             | Stratum Thickness | Stratum Base | DESCRIPTION                                                                                                                                                                                                      | % Recovery                                                                         | Installation |
|                                                                    |                                          | Test Type              | N Value /Blows | Hand Pen. | DP              |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 0                                                                  | ES1<br>U1<br><br>Soil: env<br>MC, SO4/pH |                        |                |           | 0 5 10 15 20 25 |           | R1 |   | 0.40              | 0.40         | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Strong eutrophic (anoxic) odour and abundant roots and rootlets.                                                          | U1 90%                                                                             |              |
| 0.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              | 0.50                                                                                                                                                                                                             |                                                                                    |              |
| 1                                                                  | U2<br><br>PSD+                           | SPTc                   | 39             |           |                 |           |    |   | 0.60              | 1.50         | Medium-dense to dense, saturated, orangish brown, slightly clayey, slightly silty, very sandy GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). | U2 100%                                                                            |              |
| 1.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              | 0.45                                                                                                                                                                                                             |                                                                                    |              |
| 2                                                                  | U£<br><br>MC/PI,<br>SO4/pH               | SPTc                   | 24             |           |                 |           | E1 |  | 0.80              | 2.75         | Medium-dense, saturated, orangish brown, clayey, silty SAND and GRAVEL. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD).                               | U3 70%                                                                             |              |
| 2.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              | 0.25                                                                                                                                                                                                             |                                                                                    |              |
| 3                                                                  |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 3.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 4                                                                  |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 4.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 5                                                                  |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 5.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 6                                                                  |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |
| 6.5                                                                |                                          |                        |                |           |                 |           |    |                                                                                    |                   |              |                                                                                                                                                                                                                  |                                                                                    |              |

|                                                                                                                                                                                                               |  |   |  |                                                                 |  |                                        |  |               |  |      |  |             |  |              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|-----------------------------------------------------------------|--|----------------------------------------|--|---------------|--|------|--|-------------|--|--------------|--|
| OTHER COMMENTS:<br>Water encountered at 2.2m with 1m casing. At end of sampling, water at 1.13m which rose to 0.9m on removal of casing.<br>Hole collapsed at 2.5m with dynamic probing continuation from 3m. |  |   |  | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |  | EQUIPMENT/MODALITY:<br>Archway Lite DS |  |               |  |      |  |             |  |              |  |
| GW ENCOUNTERED:                                                                                                                                                                                               |  | Y |  | GW INFLOW RATE:                                                 |  | Seepage                                |  | INSTALLATION: |  | None |  | LOGGED: KLH |  | CHECKED: KLH |  |

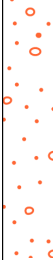
| Date                  | 25/03/2024 | Site:     | Observer Park, Arborfield |    | Borehole Number | WS07     |    |
|-----------------------|------------|-----------|---------------------------|----|-----------------|----------|----|
| Job Number            | 64065      |           |                           |    |                 | Comments |    |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15              | 20       | 25 |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |                 |          |    |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |                 |          |    |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |                 |          |    |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |                 |          |    |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |                 |          |    |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |                 |          |    |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |                 |          |    |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |                 |          |    |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |                 |          |    |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |                 |          |    |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |                 |          |    |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |                 |          |    |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |                 |          |    |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |                 |          |    |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |                 |          |    |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |                 |          |    |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |                 |          |    |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |                 |          |    |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |                 |          |    |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |                 |          |    |
| 2.0 - 2.1             |            | 2.0 - 2.1 |                           |    |                 |          |    |
| 2.1 - 2.2             |            | 2.1 - 2.2 |                           |    |                 |          |    |
| 2.2 - 2.3             |            | 2.2 - 2.3 |                           |    |                 |          |    |
| 2.3 - 2.4             |            | 2.3 - 2.4 |                           |    |                 |          |    |
| 2.4 - 2.5             |            | 2.4 - 2.5 |                           |    |                 |          |    |
| 2.5 - 2.6             |            | 2.5 - 2.6 |                           |    |                 |          |    |
| 2.6 - 2.7             |            | 2.6 - 2.7 |                           |    |                 |          |    |
| 2.7 - 2.8             |            | 2.7 - 2.8 |                           |    |                 |          |    |
| 2.8 - 2.9             |            | 2.8 - 2.9 |                           |    |                 |          |    |
| 2.9 - 3.0             |            | 2.9 - 3.0 |                           |    |                 |          |    |
| 3.0 - 3.1             | 2          | 3.0 - 3.1 | <div></div>               |    |                 |          |    |
| 3.1 - 3.2             | 2          | 3.1 - 3.2 | <div></div>               |    |                 |          |    |
| 3.2 - 3.3             | 1          | 3.2 - 3.3 | <div></div>               |    |                 |          |    |
| 3.3 - 3.4             | 1          | 3.3 - 3.4 | <div></div>               |    |                 |          |    |
| 3.4 - 3.5             | 2          | 3.4 - 3.5 | <div></div>               |    |                 |          |    |
| 3.5 - 3.6             | 1          | 3.5 - 3.6 | <div></div>               |    |                 |          |    |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |                 |          |    |
| 3.7 - 3.8             | 2          | 3.7 - 3.8 | <div></div>               |    |                 |          |    |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |                 |          |    |
| 3.9 - 4.0             | 2          | 3.9 - 4.0 | <div></div>               |    |                 |          |    |
| 4.0 - 4.1             | 2          | 4.0 - 4.1 | <div></div>               |    |                 |          |    |
| 4.1 - 4.2             | 2          | 4.1 - 4.2 | <div></div>               |    |                 |          |    |
| 4.2 - 4.3             | 3          | 4.2 - 4.3 | <div></div>               |    |                 |          |    |
| 4.3 - 4.4             | 2          | 4.3 - 4.4 | <div></div>               |    |                 |          |    |
| 4.4 - 4.5             | 2          | 4.4 - 4.5 | <div></div>               |    |                 |          |    |
| 4.5 - 4.6             | 2          | 4.5 - 4.6 | <div></div>               |    |                 |          |    |
| 4.6 - 4.7             | 3          | 4.6 - 4.7 | <div></div>               |    |                 |          |    |
| 4.7 - 4.8             | 2          | 4.7 - 4.8 | <div></div>               |    |                 |          |    |
| 4.8 - 4.9             | 3          | 4.8 - 4.9 | <div></div>               |    |                 |          |    |
| 4.9 - 5.0             | 3          | 4.9 - 5.0 | <div></div>               |    |                 |          |    |
| 5.0 - 5.1             |            | 5.0 - 5.1 |                           |    |                 |          |    |
| 5.1 - 5.2             |            | 5.1 - 5.2 |                           |    |                 |          |    |
| 5.2 - 5.3             |            | 5.2 - 5.3 |                           |    |                 |          |    |
| 5.3 - 5.4             |            | 5.3 - 5.4 |                           |    |                 |          |    |
| 5.4 - 5.5             |            | 5.4 - 5.5 |                           |    |                 |          |    |
| 5.5 - 5.6             |            | 5.5 - 5.6 |                           |    |                 |          |    |
| 5.6 - 5.7             |            | 5.6 - 5.7 |                           |    |                 |          |    |
| 5.7 - 5.8             |            | 5.7 - 5.8 |                           |    |                 |          |    |
| 5.8 - 5.9             |            | 5.8 - 5.9 |                           |    |                 |          |    |
| 5.9 - 6.0             |            | 5.9 - 6.0 |                           |    |                 |          |    |
| Remarks               |            |           |                           |    |                 |          |    |
| Hammer Weight 63.5 kg |            |           |                           |    |                 |          |    |

|                                                                                                                                                                                        |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|----------------|-----------------|----|-----------|----|---------------|-------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                                                                                                                                                                          |                    | Observer Park          |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |  |              |                                 |  |                  |  |
| SITE LOCATION:                                                                                                                                                                         |                    | Arborfield, Reading    |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                                                                                                                                                                                |                    | Carbide Properties Ltd |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                                                                                                                                                                            |                    | 27/03/2024             |                |                 |    | EASTING:  |    |               |                   | 475055                                          |                                                                                                                                                                                                                                |                                                                                    |              | BOREHOLE ID:                    |  | WS08             |  |
| END DATE:                                                                                                                                                                              |                    | 27/03/2024             |                |                 |    | NORTHING: |    |               |                   | 167246                                          |                                                                                                                                                                                                                                |                                                                                    |              | TOTAL DEPTH:                    |  | 2mbgl + DP to 6m |  |
| MEASURING POINT: Ground Level                                                                                                                                                          |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                                                                                                                                                                              | Laboratory Testing | In-Situ Testing        |                |                 |    |           | GW | Legend        | Stratum Thickness | Stratum Base                                    | DESCRIPTION                                                                                                                                                                                                                    | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                                                                                                                                                                                        |                    | Test Type              | N Value /Blows | Hand Pen.       | DP |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 0                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
|                                                                                                                                                                                        |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 0.5                                                                                                                                                                                    |                    |                        |                |                 |    |           | R1 |               | 0.40              | 0.40                                            | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Strong eutrophic (anoxic) odour and abundant roots and rootlets.                                                                        | U1                                                                                 | 100%         |                                 |  |                  |  |
|                                                                                                                                                                                        |                    |                        |                |                 |    |           |    |               | 0.40              | 0.80                                            | Soft, saturated (running), yellowish brown SILT (RTD).                                                                                                                                                                         |                                                                                    |              |                                 |  |                  |  |
| 1                                                                                                                                                                                      |                    | SPTc                   | 48             |                 |    |           | E1 |               | 1.00              |                                                 | Medium-dense to dense, saturated, orangish brown, clayey, silty SAND and GRAVEL with occasional band of green sand. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). | U2                                                                                 | 60%          |                                 |  |                  |  |
| 1.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               | 1.80              |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 2                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 2.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 3                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 3.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 4                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 4.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 5                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 5.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 6                                                                                                                                                                                      |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 6.5                                                                                                                                                                                    |                    |                        |                |                 |    |           |    |               |                   |                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| OTHER COMMENTS:                                                                                                                                                                        |                    |                        |                |                 |    |           |    |               |                   | IN SITU KEY:                                    |                                                                                                                                                                                                                                | EQUIPMENT/MODALITY:                                                                |              |                                 |  |                  |  |
| Water encountered at 1.1m with 1m casing. At end of sampling, water at 1.1m which rose to 1m on removal of casing. Hole collapsed at 1.6m with dynamic probing continuation from 1.8m. |                    |                        |                |                 |    |           |    |               |                   | SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |                                                                                                                                                                                                                                | Archway Lite DS                                                                    |              |                                 |  |                  |  |
| GW ENCOUNTERED:                                                                                                                                                                        |                    | Y                      |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION: |                   | None                                            |                                                                                                                                                                                                                                | LOGGED: KLH                                                                        |              | CHECKED: KLH                    |  |                  |  |

| Date                  | 27/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number                | WS08     |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|--------------------------------|----------|
| Job Number            | 64065      |           |                           |    |    |    |    |                                | Comments |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                                |          |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    | Water at end (casing removed)  |          |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                                |          |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                                |          |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                                |          |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                                |          |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                                |          |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                                |          |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                                |          |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                                |          |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                                |          |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    | Water strike                   |          |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                                |          |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                                |          |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                                |          |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                                |          |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    | BH Collapsed from              |          |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                                |          |
| 1.7 - 1.8             | 1          | 1.7 - 1.8 | <div></div>               |    |    |    |    |                                |          |
| 1.8 - 1.9             | 2          | 1.8 - 1.9 | <div></div>               |    |    |    |    |                                |          |
| 1.9 - 2.0             | 5          | 1.9 - 2.0 | <div></div>               |    |    |    |    |                                |          |
| 2.0 - 2.1             | 15         | 2.0 - 2.1 | <div></div>               |    |    |    |    |                                |          |
| 2.1 - 2.2             | 17         | 2.1 - 2.2 | <div></div>               |    |    |    |    |                                |          |
| 2.2 - 2.3             | 18         | 2.2 - 2.3 | <div></div>               |    |    |    |    |                                |          |
| 2.3 - 2.4             | 18         | 2.3 - 2.4 | <div></div>               |    |    |    |    |                                |          |
| 2.4 - 2.5             | 17         | 2.4 - 2.5 | <div></div>               |    |    |    |    |                                |          |
| 2.5 - 2.6             | 12         | 2.5 - 2.6 | <div></div>               |    |    |    |    | Likely London Clay transition. |          |
| 2.6 - 2.7             | 7          | 2.6 - 2.7 | <div></div>               |    |    |    |    |                                |          |
| 2.7 - 2.8             | 4          | 2.7 - 2.8 | <div></div>               |    |    |    |    |                                |          |
| 2.8 - 2.9             | 2          | 2.8 - 2.9 | <div></div>               |    |    |    |    |                                |          |
| 2.9 - 3.0             | 2          | 2.9 - 3.0 | <div></div>               |    |    |    |    |                                |          |
| 3.0 - 3.1             | 2          | 3.0 - 3.1 | <div></div>               |    |    |    |    |                                |          |
| 3.1 - 3.2             | 2          | 3.1 - 3.2 | <div></div>               |    |    |    |    |                                |          |
| 3.2 - 3.3             | 2          | 3.2 - 3.3 | <div></div>               |    |    |    |    |                                |          |
| 3.3 - 3.4             | 3          | 3.3 - 3.4 | <div></div>               |    |    |    |    |                                |          |
| 3.4 - 3.5             | 9          | 3.4 - 3.5 | <div></div>               |    |    |    |    |                                |          |
| 3.5 - 3.6             | 4          | 3.5 - 3.6 | <div></div>               |    |    |    |    | Anomaly, possible stone.       |          |
| 3.6 - 3.7             | 4          | 3.6 - 3.7 | <div></div>               |    |    |    |    |                                |          |
| 3.7 - 3.8             | 3          | 3.7 - 3.8 | <div></div>               |    |    |    |    |                                |          |
| 3.8 - 3.9             | 4          | 3.8 - 3.9 | <div></div>               |    |    |    |    |                                |          |
| 3.9 - 4.0             | 4          | 3.9 - 4.0 | <div></div>               |    |    |    |    |                                |          |
| 4.0 - 4.1             | 4          | 4.0 - 4.1 | <div></div>               |    |    |    |    |                                |          |
| 4.1 - 4.2             | 4          | 4.1 - 4.2 | <div></div>               |    |    |    |    |                                |          |
| 4.2 - 4.3             | 3          | 4.2 - 4.3 | <div></div>               |    |    |    |    |                                |          |
| 4.3 - 4.4             | 4          | 4.3 - 4.4 | <div></div>               |    |    |    |    |                                |          |
| 4.4 - 4.5             | 3          | 4.4 - 4.5 | <div></div>               |    |    |    |    |                                |          |
| 4.5 - 4.6             | 4          | 4.5 - 4.6 | <div></div>               |    |    |    |    |                                |          |
| 4.6 - 4.7             | 3          | 4.6 - 4.7 | <div></div>               |    |    |    |    |                                |          |
| 4.7 - 4.8             | 4          | 4.7 - 4.8 | <div></div>               |    |    |    |    |                                |          |
| 4.8 - 4.9             | 4          | 4.8 - 4.9 | <div></div>               |    |    |    |    |                                |          |
| 4.9 - 5.0             | 4          | 4.9 - 5.0 | <div></div>               |    |    |    |    |                                |          |
| 5.0 - 5.1             | 4          | 5.0 - 5.1 | <div></div>               |    |    |    |    |                                |          |
| 5.1 - 5.2             | 5          | 5.1 - 5.2 | <div></div>               |    |    |    |    |                                |          |
| 5.2 - 5.3             | 4          | 5.2 - 5.3 | <div></div>               |    |    |    |    |                                |          |
| 5.3 - 5.4             | 4          | 5.3 - 5.4 | <div></div>               |    |    |    |    |                                |          |
| 5.4 - 5.5             | 4          | 5.4 - 5.5 | <div></div>               |    |    |    |    |                                |          |
| 5.5 - 5.6             | 4          | 5.5 - 5.6 | <div></div>               |    |    |    |    |                                |          |
| 5.6 - 5.7             | 4          | 5.6 - 5.7 | <div></div>               |    |    |    |    |                                |          |
| 5.7 - 5.8             | 4          | 5.7 - 5.8 | <div></div>               |    |    |    |    |                                |          |
| 5.8 - 5.9             | 4          | 5.8 - 5.9 | <div></div>               |    |    |    |    |                                |          |
| 5.9 - 6.0             | 5          | 5.9 - 6.0 | <div></div>               |    |    |    |    |                                |          |
| Remarks               |            |           |                           |    |    |    |    |                                |          |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                                |          |

|                                                                                                                                                                                            |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------|----------------|-----------------|----|-----------|----|-----------------------------------------------------------------------------------|-------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                                                                                                                                                                              |                    | Observer Park             |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |  |              |                                 |  |                  |  |
| SITE LOCATION:                                                                                                                                                                             |                    | Arborfield, Reading       |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                                                                                                                                                                                    |                    | Carbide Properties Ltd    |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                                                                                                                                                                                |                    | 26/03/2024                |                |                 |    | EASTING:  |    |                                                                                   |                   | 475041                                          |                                                                                                                                                                                                                              |                                                                                    |              | BOREHOLE ID:                    |  | WS09             |  |
| END DATE:                                                                                                                                                                                  |                    | 26/03/2024                |                |                 |    | NORTHING: |    |                                                                                   |                   | 167290                                          |                                                                                                                                                                                                                              |                                                                                    |              | TOTAL DEPTH:                    |  | 2mbgl + DP to 5m |  |
| MEASURING POINT: Ground Level                                                                                                                                                              |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                                                                                                                                                                                  | Laboratory Testing | In-Situ Testing           |                |                 |    |           | GW | Legend                                                                            | Stratum Thickness | Stratum Base                                    | DESCRIPTION                                                                                                                                                                                                                  | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                                                                                                                                                                                            |                    | Test Type                 | N Value /Blows | Hand Pen.       | DP |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 0                                                                                                                                                                                          | ES1                | Soil: env, asb MC, SO4/pH |                |                 |    |           | R1 |  | 0.60              |                                                 | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Organic odour and abundant roots and rootlets.                                                                                        | U1 90%                                                                             |              |                                 |  |                  |  |
| 0.5                                                                                                                                                                                        | U1                 |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              | PSD                             |  |                  |  |
|                                                                                                                                                                                            |                    | SPTc                      | 50             |                 |    |           | E1 |  | 0.35              | 0.95                                            | Firm, greyish brown, slightly gravelly, sandy, silty CLAY with occasional fine flint (RTD).                                                                                                                                  |                                                                                    |              |                                 |  |                  |  |
| 1                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
|                                                                                                                                                                                            |                    |                           |                |                 |    |           |    |  | 1.05              |                                                 | Medium-dense to dense, saturated, orangish brown, very clayey SAND and GRAVEL with occasional band of green sand. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). | U2 60%                                                                             |              |                                 |  |                  |  |
| 1.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 2                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   | 2.00              |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 2.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 3                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 3.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 4                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 4.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 5                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 5.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 6                                                                                                                                                                                          |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| 6.5                                                                                                                                                                                        |                    |                           |                |                 |    |           |    |                                                                                   |                   |                                                 |                                                                                                                                                                                                                              |                                                                                    |              |                                 |  |                  |  |
| OTHER COMMENTS:                                                                                                                                                                            |                    |                           |                |                 |    |           |    |                                                                                   |                   | IN SITU KEY:                                    |                                                                                                                                                                                                                              | EQUIPMENT/MODALITY:                                                                |              |                                 |  |                  |  |
| Water encountered at 0.9m with 1m casing. At end of sampling, water at 0.35m which rose to 0.24m on removal of casing. Hole collapsed at 1.7m with dynamic probing continuation from 1.7m. |                    |                           |                |                 |    |           |    |                                                                                   |                   | SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |                                                                                                                                                                                                                              | Archway Lite DS                                                                    |              |                                 |  |                  |  |
| GW ENCOUNTERED:                                                                                                                                                                            |                    | Y                         |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION:                                                                     |                   | None                                            |                                                                                                                                                                                                                              | LOGGED: KLH                                                                        |              | CHECKED: KLH                    |  |                  |  |

| Date                  | 26/03/2024 | Site:     | Observer Park, Arborfield | Borehole Number | WS09 |    |    |                                |  |
|-----------------------|------------|-----------|---------------------------|-----------------|------|----|----|--------------------------------|--|
| Job Number            | 64065      |           |                           |                 |      |    |    |                                |  |
| Depth (m)             | N100 Blows | 0         | 5                         | 10              | 15   | 20 | 25 | Comments                       |  |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |                 |      |    |    | Water at end (casing removed)  |  |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |                 |      |    |    |                                |  |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |                 |      |    |    |                                |  |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |                 |      |    |    |                                |  |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |                 |      |    |    |                                |  |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |                 |      |    |    |                                |  |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |                 |      |    |    |                                |  |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |                 |      |    |    |                                |  |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |                 |      |    |    |                                |  |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |                 |      |    |    |                                |  |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |                 |      |    |    | Water strike                   |  |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |                 |      |    |    |                                |  |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |                 |      |    |    |                                |  |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |                 |      |    |    |                                |  |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |                 |      |    |    |                                |  |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |                 |      |    |    |                                |  |
| 1.6 - 1.7             | 5          | 1.6 - 1.7 |                           |                 |      |    |    |                                |  |
| 1.7 - 1.8             | 20         | 1.7 - 1.8 |                           |                 |      |    |    |                                |  |
| 1.8 - 1.9             | 20         | 1.8 - 1.9 |                           |                 |      |    |    |                                |  |
| 1.9 - 2.0             | 21         | 1.9 - 2.0 |                           |                 |      |    |    |                                |  |
| 2.0 - 2.1             | 18         | 2.0 - 2.1 |                           |                 |      |    |    | BH Collapsed from              |  |
| 2.1 - 2.2             | 14         | 2.1 - 2.2 |                           |                 |      |    |    |                                |  |
| 2.2 - 2.3             | 8          | 2.2 - 2.3 |                           |                 |      |    |    |                                |  |
| 2.3 - 2.4             | 4          | 2.3 - 2.4 |                           |                 |      |    |    |                                |  |
| 2.4 - 2.5             | 1          | 2.4 - 2.5 |                           |                 |      |    |    |                                |  |
| 2.5 - 2.6             | 2          | 2.5 - 2.6 |                           |                 |      |    |    |                                |  |
| 2.6 - 2.7             | 1          | 2.6 - 2.7 |                           |                 |      |    |    |                                |  |
| 2.7 - 2.8             | 2          | 2.7 - 2.8 |                           |                 |      |    |    |                                |  |
| 2.8 - 2.9             | 2          | 2.8 - 2.9 |                           |                 |      |    |    |                                |  |
| 2.9 - 3.0             | 2          | 2.9 - 3.0 |                           |                 |      |    |    |                                |  |
| 3.0 - 3.1             | 3          | 3.0 - 3.1 |                           |                 |      |    |    | Likely London Clay transition. |  |
| 3.1 - 3.2             | 2          | 3.1 - 3.2 |                           |                 |      |    |    |                                |  |
| 3.2 - 3.3             | 3          | 3.2 - 3.3 |                           |                 |      |    |    |                                |  |
| 3.3 - 3.4             | 4          | 3.3 - 3.4 |                           |                 |      |    |    |                                |  |
| 3.4 - 3.5             | 4          | 3.4 - 3.5 |                           |                 |      |    |    |                                |  |
| 3.5 - 3.6             | 4          | 3.5 - 3.6 |                           |                 |      |    |    |                                |  |
| 3.6 - 3.7             | 5          | 3.6 - 3.7 |                           |                 |      |    |    |                                |  |
| 3.7 - 3.8             | 6          | 3.7 - 3.8 |                           |                 |      |    |    |                                |  |
| 3.8 - 3.9             | 6          | 3.8 - 3.9 |                           |                 |      |    |    |                                |  |
| 3.9 - 4.0             | 6          | 3.9 - 4.0 |                           |                 |      |    |    |                                |  |
| 4.0 - 4.1             | 7          | 4.0 - 4.1 |                           |                 |      |    |    |                                |  |
| 4.1 - 4.2             | 7          | 4.1 - 4.2 |                           |                 |      |    |    |                                |  |
| 4.2 - 4.3             | 8          | 4.2 - 4.3 |                           |                 |      |    |    |                                |  |
| 4.3 - 4.4             | 7          | 4.3 - 4.4 |                           |                 |      |    |    |                                |  |
| 4.4 - 4.5             | 8          | 4.4 - 4.5 |                           |                 |      |    |    |                                |  |
| 4.5 - 4.6             | 9          | 4.5 - 4.6 |                           |                 |      |    |    |                                |  |
| 4.6 - 4.7             | 8          | 4.6 - 4.7 |                           |                 |      |    |    |                                |  |
| 4.7 - 4.8             | 9          | 4.7 - 4.8 |                           |                 |      |    |    |                                |  |
| 4.8 - 4.9             | 9          | 4.8 - 4.9 |                           |                 |      |    |    |                                |  |
| 4.9 - 5.0             | 10         | 4.9 - 5.0 |                           |                 |      |    |    |                                |  |
| 5.0 - 5.1             |            | 5.0 - 5.1 |                           |                 |      |    |    |                                |  |
| 5.1 - 5.2             |            | 5.1 - 5.2 |                           |                 |      |    |    |                                |  |
| 5.2 - 5.3             |            | 5.2 - 5.3 |                           |                 |      |    |    |                                |  |
| 5.3 - 5.4             |            | 5.3 - 5.4 |                           |                 |      |    |    |                                |  |
| 5.4 - 5.5             |            | 5.4 - 5.5 |                           |                 |      |    |    |                                |  |
| 5.5 - 5.6             |            | 5.5 - 5.6 |                           |                 |      |    |    |                                |  |
| 5.6 - 5.7             |            | 5.6 - 5.7 |                           |                 |      |    |    |                                |  |
| 5.7 - 5.8             |            | 5.7 - 5.8 |                           |                 |      |    |    |                                |  |
| 5.8 - 5.9             |            | 5.8 - 5.9 |                           |                 |      |    |    |                                |  |
| 5.9 - 6.0             |            | 5.9 - 6.0 |                           |                 |      |    |    |                                |  |
| Remarks               |            |           |                           |                 |      |    |    |                                |  |
| Hammer Weight 63.5 kg |            |           |                           |                 |      |    |    |                                |  |

|                               |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
|-------------------------------|----------------------------|------------------------|----------------|-----------|----|-----------|----|-----------------------------------------------------------------------------------|-------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|--|--|
| PROJECT NAME:                 |                            | Observer Park          |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |  |              |                                 |  |  |  |
| SITE LOCATION:                |                            | Arborfield, Reading    |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| CLIENT:                       |                            | Carbide Properties Ltd |                |           |    |           |    |                                                                                   |                   | JOB NO.:     |                                                                                                                                                                                                                                         | 64065                                                                              |              |                                 |  |  |  |
| START DATE:                   |                            | 25/03/2024             |                |           |    | EASTING:  |    |                                                                                   |                   | 475012       |                                                                                                                                                                                                                                         |                                                                                    |              | BOREHOLE ID: WS10               |  |  |  |
| END DATE:                     |                            | 25/03/2024             |                |           |    | NORTHING: |    |                                                                                   |                   | 167251       |                                                                                                                                                                                                                                         |                                                                                    |              | TOTAL DEPTH: 2mbgl + DP to 5m   |  |  |  |
| MEASURING POINT: Ground Level |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              | DATUM ELEVATION (if available): |  |  |  |
| Sample ID                     | Laboratory Testing         | In-Situ Testing        |                |           |    |           | GW | Legend                                                                            | Stratum Thickness | Stratum Base | DESCRIPTION                                                                                                                                                                                                                             | % Recovery                                                                         | Installation |                                 |  |  |  |
|                               |                            | Test Type              | N Value /Blows | Hand Pen. | DP |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 0                             |                            |                        |                |           |    |           |    |                                                                                   |                   |              | Grass over saturated soft, dark brown, peaty clay backfill with occasional fine flint. Slight eutrophic (anoxic) odour and abundant roots and rootlets.                                                                                 |                                                                                    |              |                                 |  |  |  |
| 0.5                           | ES1<br>Soil: env, BRE, asb |                        |                |           |    |           | R1 |  | 0.30              |              | Loose to medium-dense, greenish grey and brown, silty, fine grained SAND with occasional fine flint RTD).                                                                                                                               | U1 90%                                                                             |              |                                 |  |  |  |
|                               |                            |                        |                |           |    |           |    |                                                                                   | 0.05              | 0.35         |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
|                               |                            |                        |                |           |    |           |    |                                                                                   | 0.40              |              | Medium-dense, wet, olive and brown, clayey, fine grained SAND with occasional gravel of flint and sandstone (RTD).                                                                                                                      |                                                                                    |              |                                 |  |  |  |
|                               |                            |                        |                |           |    |           |    |                                                                                   | 0.75              |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 1                             | U2<br>PSD, SO4/pH          | SPTc                   | 55             |           |    |           | E1 |  | 1.25              |              | Medium-dense to dense, saturated, orangish brown, slightly silty, clayey SAND and GRAVEL with occasional band of green sand. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). | U2 90%                                                                             |              |                                 |  |  |  |
|                               |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 1.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 2                             |                            |                        |                |           |    |           |    |                                                                                   | 2.00              |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 2.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 3                             |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 3.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 4                             |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 4.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 5                             |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 5.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 6                             |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |
| 6.5                           |                            |                        |                |           |    |           |    |                                                                                   |                   |              |                                                                                                                                                                                                                                         |                                                                                    |              |                                 |  |  |  |

|                                                                                                                                                                                                               |  |   |  |                                                                 |  |                                        |  |               |  |      |  |             |  |              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|-----------------------------------------------------------------|--|----------------------------------------|--|---------------|--|------|--|-------------|--|--------------|--|
| OTHER COMMENTS:<br>Water encountered at 1.4m with 1m casing. At end of sampling, water at 0.35m which rose to 0.3m on removal of casing.<br>Hole collapsed at 1.6m with dynamic probing continuation from 2m. |  |   |  | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |  | EQUIPMENT/MODALITY:<br>Archway Lite DS |  |               |  |      |  |             |  |              |  |
| GW ENCOUNTERED:                                                                                                                                                                                               |  | Y |  | GW INFLOW RATE:                                                 |  | Seepage                                |  | INSTALLATION: |  | None |  | LOGGED: KLH |  | CHECKED: KLH |  |

| Date                  | 25/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number                | WS10              |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|--------------------------------|-------------------|
| Job Number            | 64065      |           |                           |    |    |    |    |                                | Comments          |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                                |                   |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    | Water at end (casing removed)  |                   |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                                |                   |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                                |                   |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                                |                   |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                                |                   |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                                |                   |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                                |                   |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                                |                   |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                                |                   |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                                |                   |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    | Water strike                   |                   |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                                |                   |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                                |                   |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                                |                   |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                                |                   |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    |                                |                   |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                                |                   |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                                |                   |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    |                                |                   |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                                | BH Collapsed from |
| 2.0 - 2.1             | 13         | 2.0 - 2.1 |                           |    |    |    |    |                                |                   |
| 2.1 - 2.2             | 11         | 2.1 - 2.2 |                           |    |    |    |    |                                |                   |
| 2.2 - 2.3             | 6          | 2.2 - 2.3 |                           |    |    |    |    |                                |                   |
| 2.3 - 2.4             | 3          | 2.3 - 2.4 |                           |    |    |    |    |                                |                   |
| 2.4 - 2.5             | 2          | 2.4 - 2.5 |                           |    |    |    |    |                                |                   |
| 2.5 - 2.6             | 1          | 2.5 - 2.6 |                           |    |    |    |    |                                |                   |
| 2.6 - 2.7             | 1          | 2.6 - 2.7 |                           |    |    |    |    |                                |                   |
| 2.7 - 2.8             | 1          | 2.7 - 2.8 |                           |    |    |    |    |                                |                   |
| 2.8 - 2.9             | 2          | 2.8 - 2.9 |                           |    |    |    |    |                                |                   |
| 2.9 - 3.0             | 1          | 2.9 - 3.0 |                           |    |    |    |    | Likely London Clay transition. |                   |
| 3.0 - 3.1             | 2          | 3.0 - 3.1 |                           |    |    |    |    |                                |                   |
| 3.1 - 3.2             | 2          | 3.1 - 3.2 |                           |    |    |    |    |                                |                   |
| 3.2 - 3.3             | 2          | 3.2 - 3.3 |                           |    |    |    |    |                                |                   |
| 3.3 - 3.4             | 3          | 3.3 - 3.4 |                           |    |    |    |    |                                |                   |
| 3.4 - 3.5             | 3          | 3.4 - 3.5 |                           |    |    |    |    |                                |                   |
| 3.5 - 3.6             | 3          | 3.5 - 3.6 |                           |    |    |    |    |                                |                   |
| 3.6 - 3.7             | 4          | 3.6 - 3.7 |                           |    |    |    |    |                                |                   |
| 3.7 - 3.8             | 5          | 3.7 - 3.8 |                           |    |    |    |    |                                |                   |
| 3.8 - 3.9             | 5          | 3.8 - 3.9 |                           |    |    |    |    |                                |                   |
| 3.9 - 4.0             | 5          | 3.9 - 4.0 |                           |    |    |    |    |                                |                   |
| 4.0 - 4.1             | 4          | 4.0 - 4.1 |                           |    |    |    |    |                                |                   |
| 4.1 - 4.2             | 6          | 4.1 - 4.2 |                           |    |    |    |    |                                |                   |
| 4.2 - 4.3             | 6          | 4.2 - 4.3 |                           |    |    |    |    |                                |                   |
| 4.3 - 4.4             | 6          | 4.3 - 4.4 |                           |    |    |    |    |                                |                   |
| 4.4 - 4.5             | 7          | 4.4 - 4.5 |                           |    |    |    |    |                                |                   |
| 4.5 - 4.6             | 7          | 4.5 - 4.6 |                           |    |    |    |    |                                |                   |
| 4.6 - 4.7             | 8          | 4.6 - 4.7 |                           |    |    |    |    |                                |                   |
| 4.7 - 4.8             | 9          | 4.7 - 4.8 |                           |    |    |    |    |                                |                   |
| 4.8 - 4.9             | 9          | 4.8 - 4.9 |                           |    |    |    |    |                                |                   |
| 4.9 - 5.0             | 9          | 4.9 - 5.0 |                           |    |    |    |    |                                |                   |
| 5.0 - 5.1             |            | 5.0 - 5.1 |                           |    |    |    |    |                                |                   |
| 5.1 - 5.2             |            | 5.1 - 5.2 |                           |    |    |    |    |                                |                   |
| 5.2 - 5.3             |            | 5.2 - 5.3 |                           |    |    |    |    |                                |                   |
| 5.3 - 5.4             |            | 5.3 - 5.4 |                           |    |    |    |    |                                |                   |
| 5.4 - 5.5             |            | 5.4 - 5.5 |                           |    |    |    |    |                                |                   |
| 5.5 - 5.6             |            | 5.5 - 5.6 |                           |    |    |    |    |                                |                   |
| 5.6 - 5.7             |            | 5.6 - 5.7 |                           |    |    |    |    |                                |                   |
| 5.7 - 5.8             |            | 5.7 - 5.8 |                           |    |    |    |    |                                |                   |
| 5.8 - 5.9             |            | 5.8 - 5.9 |                           |    |    |    |    |                                |                   |
| 5.9 - 6.0             |            | 5.9 - 6.0 |                           |    |    |    |    |                                |                   |
| Remarks               |            |           |                           |    |    |    |    |                                |                   |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                                |                   |

|                                                                                                                                                                                                               |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|----------------|-----------------|----|-----------|----|-----------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|---------------------------------|--|------------------|--|
| PROJECT NAME:                                                                                                                                                                                                 |                    | Observer Park          |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |  |              |                                 |  |                  |  |
| SITE LOCATION:                                                                                                                                                                                                |                    | Arborfield, Reading    |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| CLIENT:                                                                                                                                                                                                       |                    | Carbide Properties Ltd |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                | JOB NO.:                                                                           |              | 64065                           |  |                  |  |
| START DATE:                                                                                                                                                                                                   |                    | 26/03/2024             |                |                 |    | EASTING:  |    |                                                                                   |                   | 475005                                                          |                                                                                                                                                                                                                                |                                                                                    |              | BOREHOLE ID:                    |  | WS11             |  |
| END DATE:                                                                                                                                                                                                     |                    | 26/03/2024             |                |                 |    | NORTHING: |    |                                                                                   |                   | 167279                                                          |                                                                                                                                                                                                                                |                                                                                    |              | TOTAL DEPTH:                    |  | 2mbgl + DP to 6m |  |
| MEASURING POINT: Ground Level                                                                                                                                                                                 |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              | DATUM ELEVATION (if available): |  |                  |  |
| Sample ID                                                                                                                                                                                                     | Laboratory Testing | In-Situ Testing        |                |                 |    |           | GW | Legend                                                                            | Stratum Thickness | Stratum Base                                                    | DESCRIPTION                                                                                                                                                                                                                    | % Recovery                                                                         | Installation |                                 |  |                  |  |
|                                                                                                                                                                                                               |                    | Test Type              | N Value /Blows | Hand Pen.       | DP |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 0                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
|                                                                                                                                                                                                               |                    |                        |                |                 |    |           | E1 |  | 0.20              | 0.20                                                            | Grass over firm, grey-brown clay backfill containing fragments of concrete and brick (fine to cobble) and gravel of flint and sandstone (fine to coarse, subangular to rounded), and abundant roots and rootlets.              |                                                                                    |              |                                 |  |                  |  |
| 0.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |  |                   |                                                                 |                                                                                                                                                                                                                                | U1 90%                                                                             |              |                                 |  |                  |  |
| 1                                                                                                                                                                                                             |                    | SPTc                   | 49             |                 |    |           | R1 |  | 1.80              |                                                                 | Medium-dense to dense, saturated, orangish brown, clayey, silty SAND and GRAVEL with occasional band of green sand. Sand of fine to coarse grain. Gravel of fine to medium, subangular to rounded and fragmented flints (RTD). |                                                                                    |              |                                 |  |                  |  |
| 1.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |  |                   |                                                                 |                                                                                                                                                                                                                                | U2 90%                                                                             |              |                                 |  |                  |  |
| 2                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |  | 2.00              |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 2.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 3                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 3.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 4                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 4.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 5                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 5.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 6                                                                                                                                                                                                             |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| 6.5                                                                                                                                                                                                           |                    |                        |                |                 |    |           |    |                                                                                   |                   |                                                                 |                                                                                                                                                                                                                                |                                                                                    |              |                                 |  |                  |  |
| OTHER COMMENTS:<br>Water encountered at 1.1m with 1m casing. At end of sampling, water at 0.6m which rose to 0.38m on removal of casing.<br>Hole collapsed at 1.7m with dynamic probing continuation from 2m. |                    |                        |                |                 |    |           |    |                                                                                   |                   | IN SITU KEY:<br>SPTc (cone)<br>SPT (spoon)<br>FH (falling head) |                                                                                                                                                                                                                                | EQUIPMENT/MODALITY:<br>Archway Lite DS                                             |              |                                 |  |                  |  |
| GW ENCOUNTERED:                                                                                                                                                                                               |                    | Y                      |                | GW INFLOW RATE: |    | Seepage   |    | INSTALLATION:                                                                     |                   | None                                                            |                                                                                                                                                                                                                                | LOGGED: KLH                                                                        |              | CHECKED: KLH                    |  |                  |  |

| Date                  | 25/03/2024 | Site:     | Observer Park, Arborfield |    |    |    |    | Borehole Number               | WS11                           |
|-----------------------|------------|-----------|---------------------------|----|----|----|----|-------------------------------|--------------------------------|
| Job Number            | 64065      |           |                           |    |    |    |    |                               | Comments                       |
| Depth (m)             | N100 Blows | 0         | 5                         | 10 | 15 | 20 | 25 |                               |                                |
| 0.0 - 0.1             |            | 0.0 - 0.1 |                           |    |    |    |    | Water at end (casing removed) |                                |
| 0.1 - 0.2             |            | 0.1 - 0.2 |                           |    |    |    |    |                               |                                |
| 0.2 - 0.3             |            | 0.2 - 0.3 |                           |    |    |    |    |                               |                                |
| 0.3 - 0.4             |            | 0.3 - 0.4 |                           |    |    |    |    |                               |                                |
| 0.4 - 0.5             |            | 0.4 - 0.5 |                           |    |    |    |    |                               |                                |
| 0.5 - 0.6             |            | 0.5 - 0.6 |                           |    |    |    |    |                               |                                |
| 0.6 - 0.7             |            | 0.6 - 0.7 |                           |    |    |    |    |                               |                                |
| 0.7 - 0.8             |            | 0.7 - 0.8 |                           |    |    |    |    |                               |                                |
| 0.8 - 0.9             |            | 0.8 - 0.9 |                           |    |    |    |    |                               |                                |
| 0.9 - 1.0             |            | 0.9 - 1.0 |                           |    |    |    |    |                               |                                |
| 1.0 - 1.1             |            | 1.0 - 1.1 |                           |    |    |    |    | Water strike                  |                                |
| 1.1 - 1.2             |            | 1.1 - 1.2 |                           |    |    |    |    |                               |                                |
| 1.2 - 1.3             |            | 1.2 - 1.3 |                           |    |    |    |    |                               |                                |
| 1.3 - 1.4             |            | 1.3 - 1.4 |                           |    |    |    |    |                               |                                |
| 1.4 - 1.5             |            | 1.4 - 1.5 |                           |    |    |    |    |                               |                                |
| 1.5 - 1.6             |            | 1.5 - 1.6 |                           |    |    |    |    | BH Collapsed from             |                                |
| 1.6 - 1.7             |            | 1.6 - 1.7 |                           |    |    |    |    |                               |                                |
| 1.7 - 1.8             |            | 1.7 - 1.8 |                           |    |    |    |    |                               |                                |
| 1.8 - 1.9             |            | 1.8 - 1.9 |                           |    |    |    |    |                               |                                |
| 1.9 - 2.0             |            | 1.9 - 2.0 |                           |    |    |    |    |                               |                                |
| 2.0 - 2.1             | 8          | 2.0 - 2.1 | <div></div>               |    |    |    |    |                               | Likely London Clay transition. |
| 2.1 - 2.2             | 16         | 2.1 - 2.2 | <div></div>               |    |    |    |    |                               |                                |
| 2.2 - 2.3             | 21         | 2.2 - 2.3 | <div></div>               |    |    |    |    |                               |                                |
| 2.3 - 2.4             | 24         | 2.3 - 2.4 | <div></div>               |    |    |    |    |                               |                                |
| 2.4 - 2.5             | 23         | 2.4 - 2.5 | <div></div>               |    |    |    |    |                               |                                |
| 2.5 - 2.6             | 23         | 2.5 - 2.6 | <div></div>               |    |    |    |    |                               |                                |
| 2.6 - 2.7             | 24         | 2.6 - 2.7 | <div></div>               |    |    |    |    |                               |                                |
| 2.7 - 2.8             | 24         | 2.7 - 2.8 | <div></div>               |    |    |    |    |                               |                                |
| 2.8 - 2.9             | 20         | 2.8 - 2.9 | <div></div>               |    |    |    |    |                               |                                |
| 2.9 - 3.0             | 14         | 2.9 - 3.0 | <div></div>               |    |    |    |    |                               |                                |
| 3.0 - 3.1             | 8          | 3.0 - 3.1 | <div></div>               |    |    |    |    |                               |                                |
| 3.1 - 3.2             | 3          | 3.1 - 3.2 | <div></div>               |    |    |    |    |                               |                                |
| 3.2 - 3.3             | 2          | 3.2 - 3.3 | <div></div>               |    |    |    |    |                               |                                |
| 3.3 - 3.4             | 1          | 3.3 - 3.4 | <div></div>               |    |    |    |    |                               |                                |
| 3.4 - 3.5             | 1          | 3.4 - 3.5 | <div></div>               |    |    |    |    |                               |                                |
| 3.5 - 3.6             | 2          | 3.5 - 3.6 | <div></div>               |    |    |    |    |                               |                                |
| 3.6 - 3.7             | 2          | 3.6 - 3.7 | <div></div>               |    |    |    |    |                               |                                |
| 3.7 - 3.8             | 3          | 3.7 - 3.8 | <div></div>               |    |    |    |    |                               |                                |
| 3.8 - 3.9             | 2          | 3.8 - 3.9 | <div></div>               |    |    |    |    |                               |                                |
| 3.9 - 4.0             | 3          | 3.9 - 4.0 | <div></div>               |    |    |    |    |                               |                                |
| 4.0 - 4.1             | 4          | 4.0 - 4.1 | <div></div>               |    |    |    |    |                               |                                |
| 4.1 - 4.2             | 3          | 4.1 - 4.2 | <div></div>               |    |    |    |    |                               |                                |
| 4.2 - 4.3             | 4          | 4.2 - 4.3 | <div></div>               |    |    |    |    |                               |                                |
| 4.3 - 4.4             | 4          | 4.3 - 4.4 | <div></div>               |    |    |    |    |                               |                                |
| 4.4 - 4.5             | 4          | 4.4 - 4.5 | <div></div>               |    |    |    |    |                               |                                |
| 4.5 - 4.6             | 4          | 4.5 - 4.6 | <div></div>               |    |    |    |    |                               |                                |
| 4.6 - 4.7             | 5          | 4.6 - 4.7 | <div></div>               |    |    |    |    |                               |                                |
| 4.7 - 4.8             | 6          | 4.7 - 4.8 | <div></div>               |    |    |    |    |                               |                                |
| 4.8 - 4.9             | 8          | 4.8 - 4.9 | <div></div>               |    |    |    |    |                               |                                |
| 4.9 - 5.0             | 8          | 4.9 - 5.0 | <div></div>               |    |    |    |    |                               |                                |
| 5.0 - 5.1             | 8          | 5.0 - 5.1 | <div></div>               |    |    |    |    |                               |                                |
| 5.1 - 5.2             | 9          | 5.1 - 5.2 | <div></div>               |    |    |    |    |                               |                                |
| 5.2 - 5.3             | 9          | 5.2 - 5.3 | <div></div>               |    |    |    |    |                               |                                |
| 5.3 - 5.4             | 9          | 5.3 - 5.4 | <div></div>               |    |    |    |    |                               |                                |
| 5.4 - 5.5             | 10         | 5.4 - 5.5 | <div></div>               |    |    |    |    |                               |                                |
| 5.5 - 5.6             | 11         | 5.5 - 5.6 | <div></div>               |    |    |    |    |                               |                                |
| 5.6 - 5.7             | 11         | 5.6 - 5.7 | <div></div>               |    |    |    |    |                               |                                |
| 5.7 - 5.8             | 12         | 5.7 - 5.8 | <div></div>               |    |    |    |    |                               |                                |
| 5.8 - 5.9             | 12         | 5.8 - 5.9 | <div></div>               |    |    |    |    |                               |                                |
| 5.9 - 6.0             | 12         | 5.9 - 6.0 | <div></div>               |    |    |    |    |                               |                                |
| Remarks               |            |           |                           |    |    |    |    |                               |                                |
| Hammer Weight 63.5 kg |            |           |                           |    |    |    |    |                               |                                |

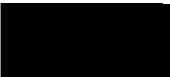
## APPENDIX C

### Geotechnical Laboratory Results



**TEST REPORT**  
ISSUED BY SOIL PROPERTY TESTING LTD  
DATE ISSUED: 18/04/2024



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Contract</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>Observer Park</b>                                                                                                                                                                                                                                                                                                                                                   |  |
| <b>Serial No.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>44496_1</b>                                                                                                                                                                                                                                                                                                                                                         |  |
| <b>Client:</b><br><br>PRP UK Ltd<br><br>Catherine House<br>Old Harborough Road<br>Brixworth<br>Northampton<br>NN6 9BX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | <b>Soil Property Testing Ltd</b><br><br>15, 16, 18 Halcyon Court, St Margaret's Way,<br>Stukeley Meadows, Huntingdon,<br>Cambridgeshire, PE29 6DG<br><br>Tel: 01480 455579<br>Email: <a href="mailto:enquiries@soilpropertytesting.com">enquiries@soilpropertytesting.com</a><br>Website: <a href="http://www.soilpropertytesting.com">www.soilpropertytesting.com</a> |  |
| <b>Samples Submitted By:</b><br>PRP UK Ltd<br><br><b>Samples Labelled:</b><br>Observer Park                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | <b>Approved Signatories:</b><br><br><input checked="" type="checkbox"/> <b>J.C. Garner B.Eng (Hons) FGS</b><br>Technical Director & Quality Manager<br><br><input type="checkbox"/> <b>W. Johnstone</b><br>Materials Lab Manager<br><br>                                          |  |
| <b>Date Received:</b> 04/04/2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>Samples Tested Between:</b> 04/04/2024 and 18/04/2024                                                                                                                                                                                                                                                                                                               |  |
| <b>Remarks:</b><br>For the attention of Karen Holton<br>Your Reference No: 64065                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Notes:</b><br><br>1 All remaining samples or remnants from this contract will be disposed of after 21 days from today, unless we are notified to the contrary.<br><br>2 Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.<br><br>3 Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.<br><br>4 This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.<br><br>5 The results within this report only relate to the items tested or sampled. |  |                                                                                                                                                                                                                                                                                                                                                                        |  |



# TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD  
DATE ISSUED: 18/04/2024



|                  |      |             |               |                                                                                                                  |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------|-------------|---------------|------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|-------------|--|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Contract         |      |             | Observer Park |                                                                                                                  |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Serial No.       |      |             | 44496_1       |                                                                                                                  |  |  |  |  |  |  |  |  | Target Date |  | 18/04/2024 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scheduled By     |      |             | PRP UK Ltd    |                                                                                                                  |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |      |             |               |                                                                                                                  |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Schedule Remarks |      |             |               |                                                                                                                  |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bore Hole No.    | Type | Sample Ref. | Top Depth     | Particle Size Distribution (BS1377)<br>Sulphate Content/pH Value<br>Water Content (BSN)<br>Liquid/Plastic Limits |  |  |  |  |  |  |  |  |             |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |





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|            |               |
|------------|---------------|
| Contract   | Observer Park |
| Serial No. | 44496_1       |

## SUMMARY OF WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX

| Borehole /Pit No. | Depth (m)   | Type | Ref. | Water Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Liquidity Index | Sample Preparation |                   |                     |                   | Description                                                               | Class |
|-------------------|-------------|------|------|-------------------|------------------|-------------------|----------------------|-----------------|--------------------|-------------------|---------------------|-------------------|---------------------------------------------------------------------------|-------|
|                   |             |      |      |                   |                  |                   |                      |                 | Method             | Ret'd 0.425mm (%) | Corr'd W/C <0.425mm | Curing Time (hrs) |                                                                           |       |
| WS01              | 2.60 - 3.00 | U    | 3    | 27.4              | 59               | 21                | 38                   | 0.17            | From Natural       | 0 (A)             |                     | 24                | Firm dark grey CLAY.                                                      | CH    |
| WS03              | 2.80 - 3.00 | U    | 3    | 27.4              | 54               | 20                | 34                   | 0.22            | From Natural       | 0 (A)             |                     | 24                | Firm dark grey CLAY.                                                      | CH    |
| WS07              | 2.85 - 3.00 | U    | 3    | 32.9              | 55               | 21                | 34                   | 0.35            | From Natural       | 0 (A)             |                     | 24                | Soft dark grey CLAY with rare orange silt partings and rare shell traces. | CH    |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |
|                   |             |      |      |                   |                  |                   |                      |                 |                    |                   |                     |                   |                                                                           |       |

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Method Of Preparation: | BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:4.2                                                     |
| Method of Test:        | BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:3.2, 4.4, 5.3, 5.4                                      |
| Type of Sample Key:    | U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter |
| Comments:              |                                                                                                         |
| Table Notation:        | Ret'd 0.425mm: (A) = Assumed, (M) = Measured                                                            |



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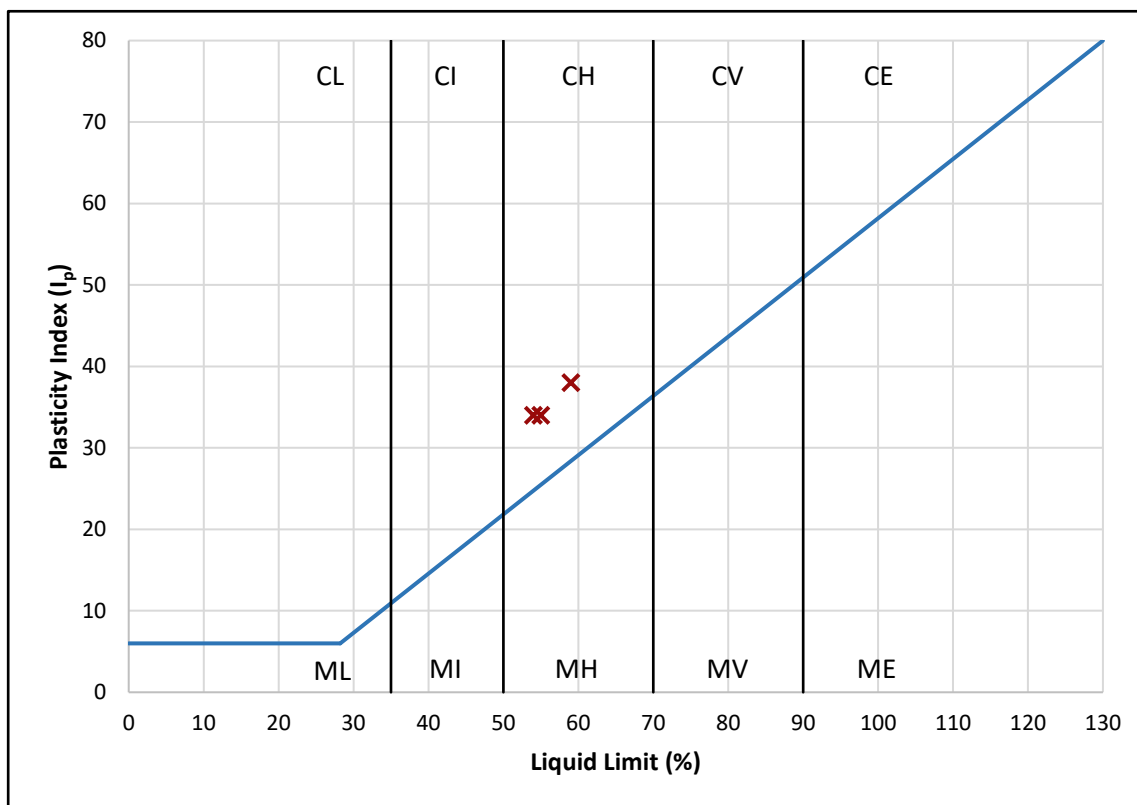
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|            |               |
|------------|---------------|
| Contract   | Observer Park |
| Serial No. | 44496_1       |

## PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART

| Plasticity |        |      |           |                |
|------------|--------|------|-----------|----------------|
| Low        | Medium | High | Very High | Extremely High |



Plasticity Chart BS5930: 2015: Figure 8

|        |                              |
|--------|------------------------------|
| High   | NHBC Volume Change Potential |
| Medium |                              |
| Low    |                              |

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Method of Preparation: | BS 1377: Part 2: 1990: 4.2                                                                              |
| Method of Test:        | BS1377: Part 2: 3.2, 4.4, 5.3, 5.4                                                                      |
| Type of Sample Key:    | U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter |
| Comments:              | Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index                         |



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|                                                                                                                                                                                                                |               |                         |        |                        |                      |                                                    |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|--------|------------------------|----------------------|----------------------------------------------------|--------------|
| Contract                                                                                                                                                                                                       | Observer Park |                         |        |                        |                      |                                                    |              |
| Serial No.                                                                                                                                                                                                     | 44496_1       |                         |        |                        |                      |                                                    |              |
| DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND<br>DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX                                                                                       |               |                         |        |                        |                      |                                                    |              |
| Borehole / Pit No.                                                                                                                                                                                             | Depth<br>m    | Sample<br>TypeReference |        | Water Content<br>(W) % | Description          | Remarks                                            |              |
| WS01                                                                                                                                                                                                           | 2.60 - 3.00   | U                       | 3      | 27.4                   | Firm dark grey CLAY. |                                                    |              |
| PREPARATION                                                                                                                                                                                                    |               |                         |        |                        | Liquid Limit         | 59 %                                               |              |
| Method of preparation                                                                                                                                                                                          |               |                         |        |                        | From natural         | Plastic Limit                                      | 21 %         |
| Sample retained 0.425mm sieve (Assumed)                                                                                                                                                                        |               |                         |        |                        | 0 %                  | Plasticity Index                                   | 38 %         |
| Corrected water content for material passing 0.425mm                                                                                                                                                           |               |                         |        |                        |                      | Liquidity Index                                    | 0.17         |
| Sample retained 2mm sieve (Assumed)                                                                                                                                                                            |               |                         |        |                        | 0 %                  | NHBC Modified (I'p)                                | n/a          |
| Curing time                                                                                                                                                                                                    |               |                         | 24 hrs | Clay Content           | Not analysed         | Derived Activity                                   | Not analysed |
| <div><div>C=CLAY</div><div>M=SILT</div><div>Plasticity Index %<br/>(Ip)</div></div> <div><div>High</div><div>Medium</div><div>Low</div><div>NHBC Volume Change Potential</div></div> <div>Liquid Limit %</div> |               |                         |        |                        |                      | <div>Plasticity Chart BS5930: 2015: Figure 8</div> |              |
| Method of Preparation: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2                                                                                                                                   |               |                         |        |                        |                      |                                                    |              |
| Method of Test: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4                                                                                                                           |               |                         |        |                        |                      |                                                    |              |
| Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter                                                                                                  |               |                         |        |                        |                      |                                                    |              |
| Comments:                                                                                                                                                                                                      |               |                         |        |                        |                      |                                                    |              |



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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                         |   |                        |                      |                     |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|---|------------------------|----------------------|---------------------|--------------|
| Contract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Observer Park |                         |   |                        |                      |                     |              |
| Serial No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 44496_1       |                         |   |                        |                      |                     |              |
| DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND<br>DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                         |   |                        |                      |                     |              |
| Borehole / Pit No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Depth<br>m    | Sample<br>TypeReference |   | Water Content<br>(W) % | Description          | Remarks             |              |
| WS03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.80 - 3.00   | U                       | 3 | 27.4                   | Firm dark grey CLAY. |                     |              |
| PREPARATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                         |   |                        | Liquid Limit         | 54 %                |              |
| Method of preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                         |   |                        | From natural         | Plastic Limit       | 20 %         |
| Sample retained 0.425mm sieve (Assumed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                         |   |                        | 0 %                  | Plasticity Index    | 34 %         |
| Corrected water content for material passing 0.425mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                         |   |                        |                      | Liquidity Index     | 0.22         |
| Sample retained 2mm sieve (Assumed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |                         |   |                        | 0 %                  | NHBC Modified (I'p) | n/a          |
| Curing time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               | 24 hrs                  |   | Clay Content           | Not analysed         | Derived Activity    | Not analysed |
| <div><div>C=CLAY</div><div>M=SILT</div><div>Plasticity Index %<br/>(Ip)</div><div>70<br/>60<br/>50<br/>40<br/>30<br/>20<br/>10<br/>0</div><div><div>CL</div><div>CI</div><div>CH</div><div>CV</div><div>CE</div><div>ML</div><div>MI</div><div>MH</div><div>MV</div><div>ME</div></div><div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div><div>50</div><div>60</div><div>70</div><div>80</div><div>90</div><div>100</div><div>110</div><div>120</div></div><div><div>Plasticity Chart BS5930: 2015: Figure 8</div><div><div>High</div><div>Medium</div><div>Low</div><div>NHBC Volume Change Potential</div></div><div>Liquid Limit %</div></div></div> |               |                         |   |                        |                      |                     |              |
| Method of Preparation: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                         |   |                        |                      |                     |              |
| Method of Test: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                         |   |                        |                      |                     |              |
| Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                         |   |                        |                      |                     |              |
| Comments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                         |   |                        |                      |                     |              |



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|                                                                                                                                                                                                                |               |                         |   |                           |                                                                           |                     |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|---|---------------------------|---------------------------------------------------------------------------|---------------------|--------------|
| Contract                                                                                                                                                                                                       | Observer Park |                         |   |                           |                                                                           |                     |              |
| Serial No.                                                                                                                                                                                                     | 44496_1       |                         |   |                           |                                                                           |                     |              |
| DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND<br>DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX                                                                                       |               |                         |   |                           |                                                                           |                     |              |
| Borehole / Pit No.                                                                                                                                                                                             | Depth<br>m    | Sample<br>TypeReference |   | Water<br>Content<br>(W) % | Description                                                               | Remarks             |              |
| WS07                                                                                                                                                                                                           | 2.85 - 3.00   | U                       | 3 | 32.9                      | Soft dark grey CLAY with rare orange silt partings and rare shell traces. |                     |              |
| PREPARATION                                                                                                                                                                                                    |               |                         |   |                           | Liquid Limit                                                              | 55 %                |              |
| Method of preparation                                                                                                                                                                                          |               |                         |   |                           | From natural                                                              | Plastic Limit       | 21 %         |
| Sample retained 0.425mm sieve (Assumed)                                                                                                                                                                        |               |                         |   |                           | 0 %                                                                       | Plasticity Index    | 34 %         |
| Corrected water content for material passing 0.425mm                                                                                                                                                           |               |                         |   |                           |                                                                           | Liquidity Index     | 0.35         |
| Sample retained 2mm sieve (Assumed)                                                                                                                                                                            |               |                         |   |                           | 0 %                                                                       | NHBC Modified (I'p) | n/a          |
| Curing time                                                                                                                                                                                                    |               | 24 hrs                  |   | Clay Content              | Not analysed                                                              | Derived Activity    | Not analysed |
| <div><div>C=CLAY</div><div>M=SILT</div><div>Plasticity Index %<br/>(Ip)</div></div> <div><div>High</div><div>Medium</div><div>Low</div><div>NHBC Volume Change Potential</div></div> <div>Liquid Limit %</div> |               |                         |   |                           |                                                                           |                     |              |

Plasticity Chart BS5930: 2015: Figure 8



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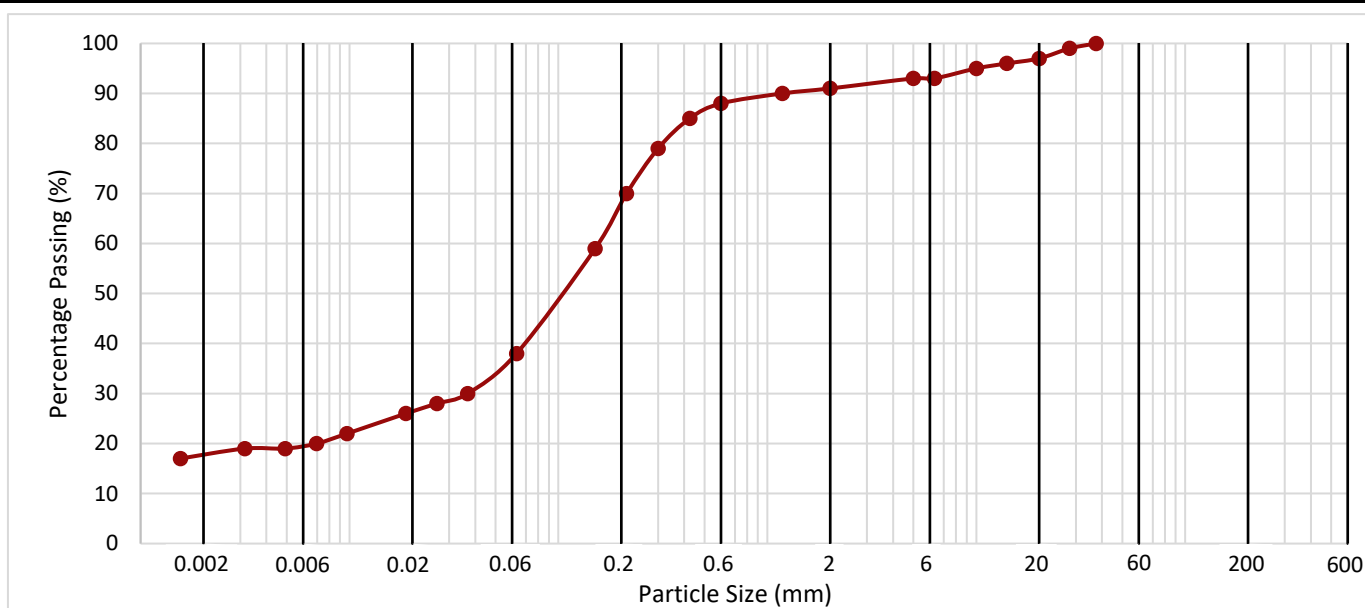


|            |               |
|------------|---------------|
| Contract   | Observer Park |
| Serial No. | 44496_1       |

## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                                                              | Remarks |
|--------------------|-------------|--------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                                                                          |         |
| WS01               | 0.30 - 1.00 | U      | 1         | Pale olive and locally brown slightly gravelly sandy silty CLAY. Gravel is brown, black and white angular to rounded chert and rare brown and white quartzite and chalk. |         |

Method of Test: Wet Sieve + Hydrometer Method of Pretreatment: Not required



| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 0.0368             | 30          | 21                   |
|                                                | 0.0262             | 28          |                      |
|                                                | 0.0186             | 26          |                      |
|                                                | 0.0097             | 22          | Clay by Dry Mass (%) |
|                                                | 0.0070             | 20          |                      |
|                                                | 0.0049             | 19          |                      |
|                                                | 0.0032             | 19          | 17                   |
|                                                | 0.0016             | 17          |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 91          | 53                   |
| 1.18            | 90          |                      |
| 0.600           | 88          |                      |
| 0.425           | 85          |                      |
| 0.300           | 79          |                      |
| 0.212           | 70          |                      |
| 0.150           | 59          |                      |
| 0.063           | 38          |                      |

| Fines By Dry Mass (%) |    |
|-----------------------|----|
| <0.063mm              | 38 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 9                    |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            | 100         |                      |
| 28              | 99          |                      |
| 20              | 97          |                      |
| 14              | 96          |                      |
| 10              | 95          |                      |
| 6.3             | 93          |                      |
| 5               | 93          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2,9.5  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



# TEST REPORT

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| Contract   | Observer Park |
| Serial No. | 44496_1       |

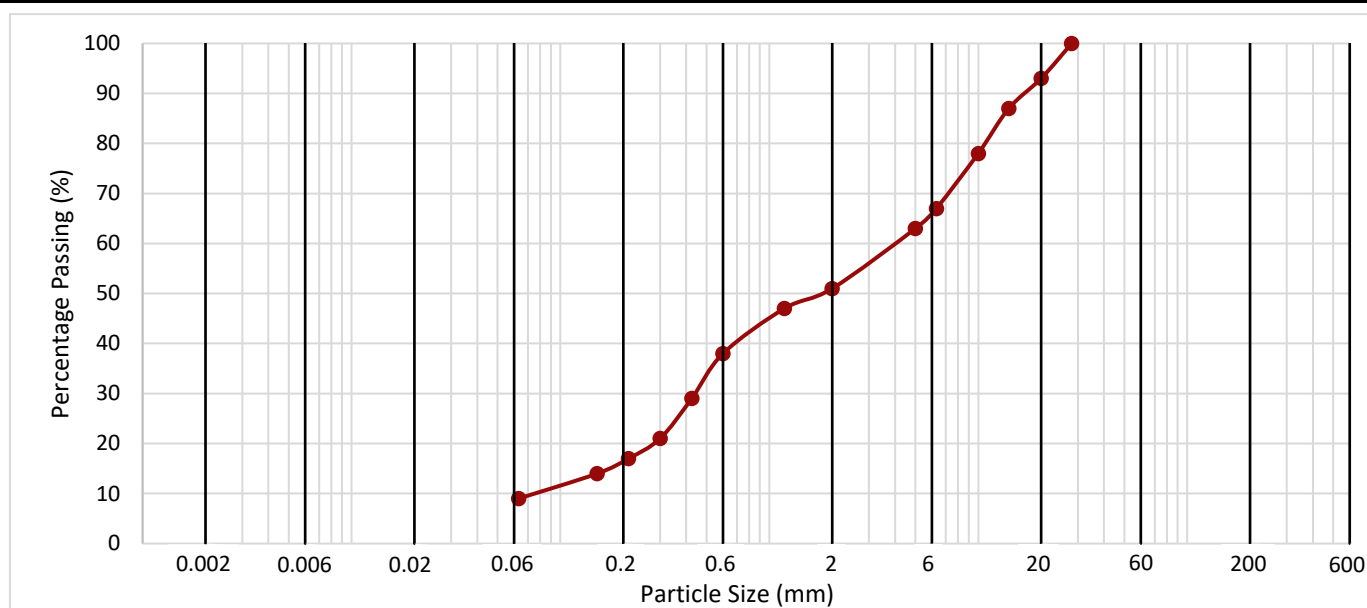
## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                                    | Remarks |
|--------------------|-------------|--------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                                                |         |
| WS02               | 1.30 - 2.00 | U      | 2         | Brown, black and white sub angular to sub rounded chert and rare light brown sandstone clayey slightly silty very sandy GRAVEL. Sand is brown. |         |

Method of Test: Wet Sieve

Method of Pretreatment:

Not required



| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| Hydrometer | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------|--------------------|-------------|----------------------|
|            | 0.075              |             |                      |
|            | 0.15               |             |                      |
|            | 0.25               |             |                      |
|            | 0.425              |             |                      |
|            | 0.6                |             |                      |
|            | 0.85               |             |                      |
|            | 1.18               |             |                      |
|            | Particle Size (mm) | Passing (%) | Clay by Dry Mass (%) |
|            | 0.075              |             |                      |
|            | 0.15               |             |                      |
|            | 0.25               |             |                      |
|            | 0.425              |             |                      |
|            | 0.6                |             |                      |
|            | 0.85               |             |                      |
|            | 1.18               |             |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 51          | 42                   |
| 1.18            | 47          |                      |
| 0.600           | 38          |                      |
| 0.425           | 29          |                      |
| 0.300           | 21          |                      |
| 0.212           | 17          |                      |
| 0.150           | 14          |                      |
| 0.063           | 9           |                      |

| Fines By Dry Mass (%) |   |
|-----------------------|---|
| <0.063mm              | 9 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 49                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            |             |                      |
| 28              | 100         |                      |
| 20              | 93          |                      |
| 14              | 87          |                      |
| 10              | 78          |                      |
| 6.3             | 67          |                      |
| 5               | 63          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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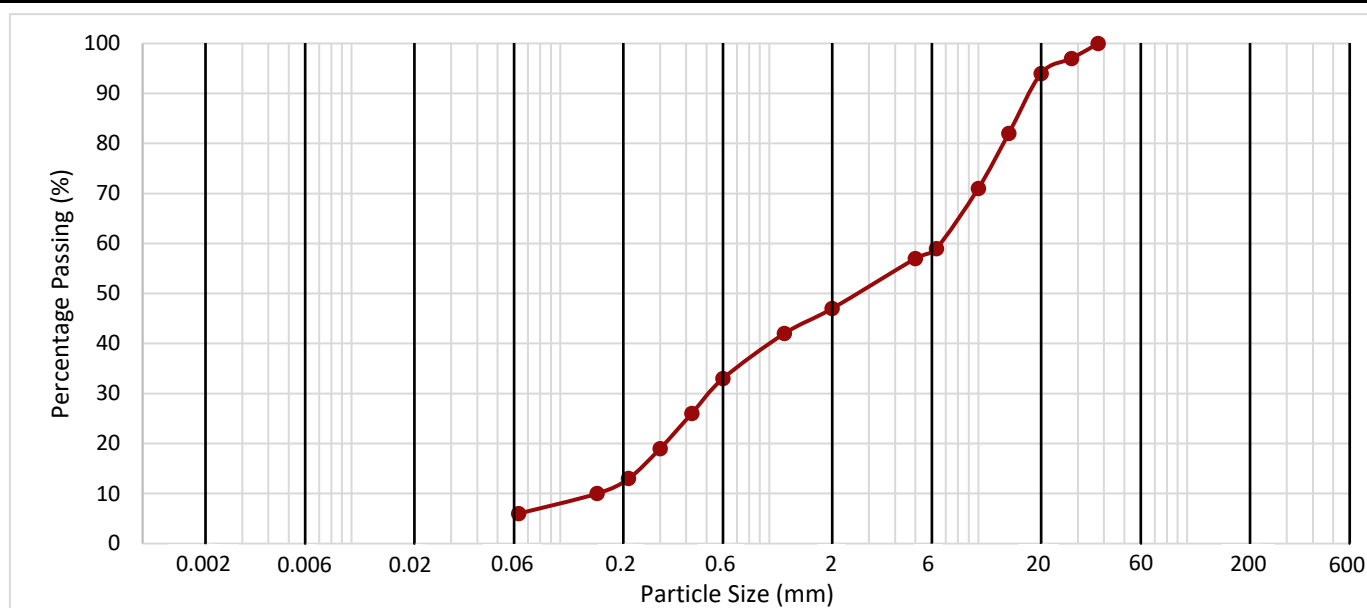
## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                                                           | Remarks |
|--------------------|-------------|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                                                                       |         |
| WS03               | 2.50 - 2.80 | U      | 3         | Brown, black and white sub angular to sub rounded chert and rare yellowish brown sandstone slightly clayey slightly silty very sandy GRAVEL. Sand is brownish yellow. |         |

Method of Test: Wet Sieve

Method of Pretreatment:

Not required



|      |      |        |        |      |        |        |        |        |        |         |          |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 0.075              |             |                      |
|                                                | 0.15               |             |                      |
|                                                | 0.3                |             |                      |
|                                                | 0.6                |             |                      |
|                                                | 1.2                |             |                      |
|                                                | 2.5                |             |                      |
|                                                | 5                  |             |                      |
|                                                | Particle Size (mm) | Passing (%) | Clay by Dry Mass (%) |
|                                                | 0.075              |             |                      |
|                                                | 0.15               |             |                      |
|                                                | 0.3                |             |                      |
|                                                | 0.6                |             |                      |
|                                                | 1.2                |             |                      |
|                                                | 2.5                |             |                      |
|                                                | 5                  |             |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 47          | 41                   |
| 1.18            | 42          |                      |
| 0.600           | 33          |                      |
| 0.425           | 26          |                      |
| 0.300           | 19          |                      |
| 0.212           | 13          |                      |
| 0.150           | 10          |                      |
| 0.063           | 6           |                      |

| Fines By Dry Mass (%) |   |
|-----------------------|---|
| <0.063mm              | 6 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 53                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            | 100         |                      |
| 28              | 97          |                      |
| 20              | 94          |                      |
| 14              | 82          |                      |
| 10              | 71          |                      |
| 6.3             | 59          |                      |
| 5               | 57          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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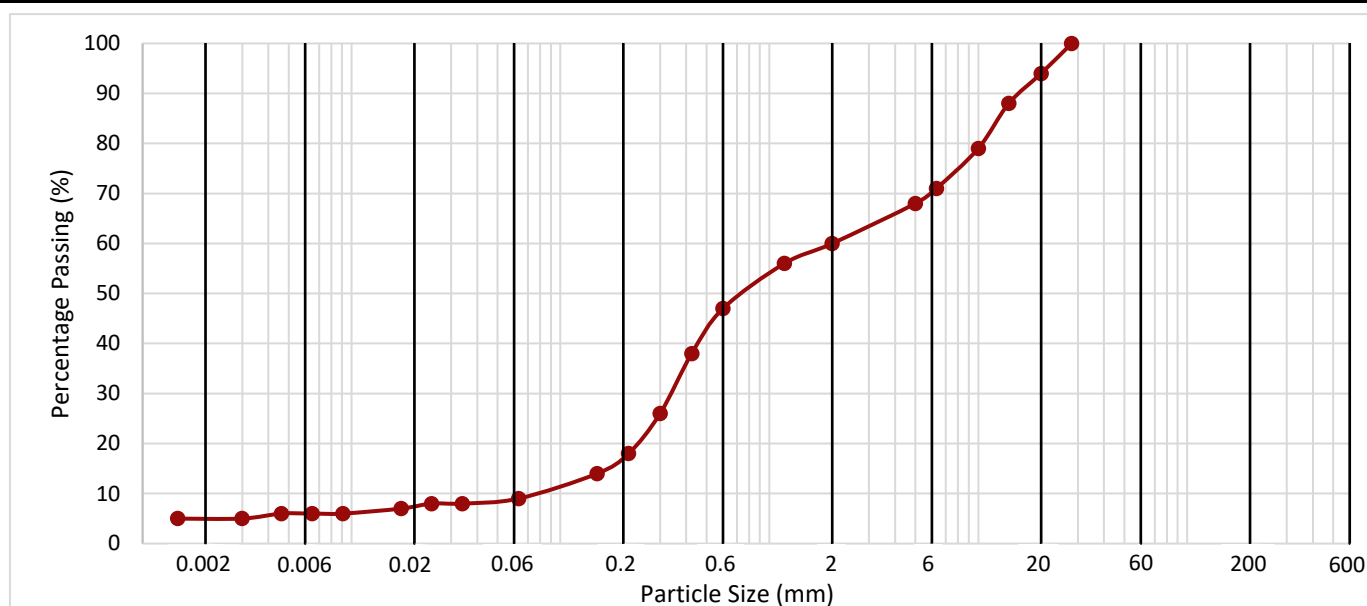


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## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                                                     | Remarks |
|--------------------|-------------|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                                                                 |         |
| WS05               | 1.00 - 2.00 | U      | 2         | Yellowish brown clayey slightly silty very gravelly SAND. Gravel is brown, black and white sub angular to sub rounded chert and rare yellowish brown sandstone. |         |

Method of Test: Wet Sieve + Hydrometer Method of Pretreatment: Not required



|      |      |        |        |      |        |        |        |        |        |         |          |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 0.0339             | 8           | 4                    |
|                                                | 0.0242             | 8           |                      |
|                                                | 0.0173             | 7           |                      |
|                                                | 0.0091             | 6           | Clay by Dry Mass (%) |
|                                                | 0.0065             | 6           |                      |
|                                                | 0.0046             | 6           |                      |
|                                                | 0.0030             | 5           | 5                    |
|                                                | 0.0015             | 5           |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 60          | 51                   |
| 1.18            | 56          |                      |
| 0.600           | 47          |                      |
| 0.425           | 38          |                      |
| 0.300           | 26          |                      |
| 0.212           | 18          |                      |
| 0.150           | 14          |                      |
| 0.063           | 9           |                      |

| Fines By Dry Mass (%) |   |
|-----------------------|---|
| <0.063mm              | 9 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 40                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            |             |                      |
| 28              | 100         |                      |
| 20              | 94          |                      |
| 14              | 88          |                      |
| 10              | 79          |                      |
| 6.3             | 71          |                      |
| 5               | 68          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2,9.5  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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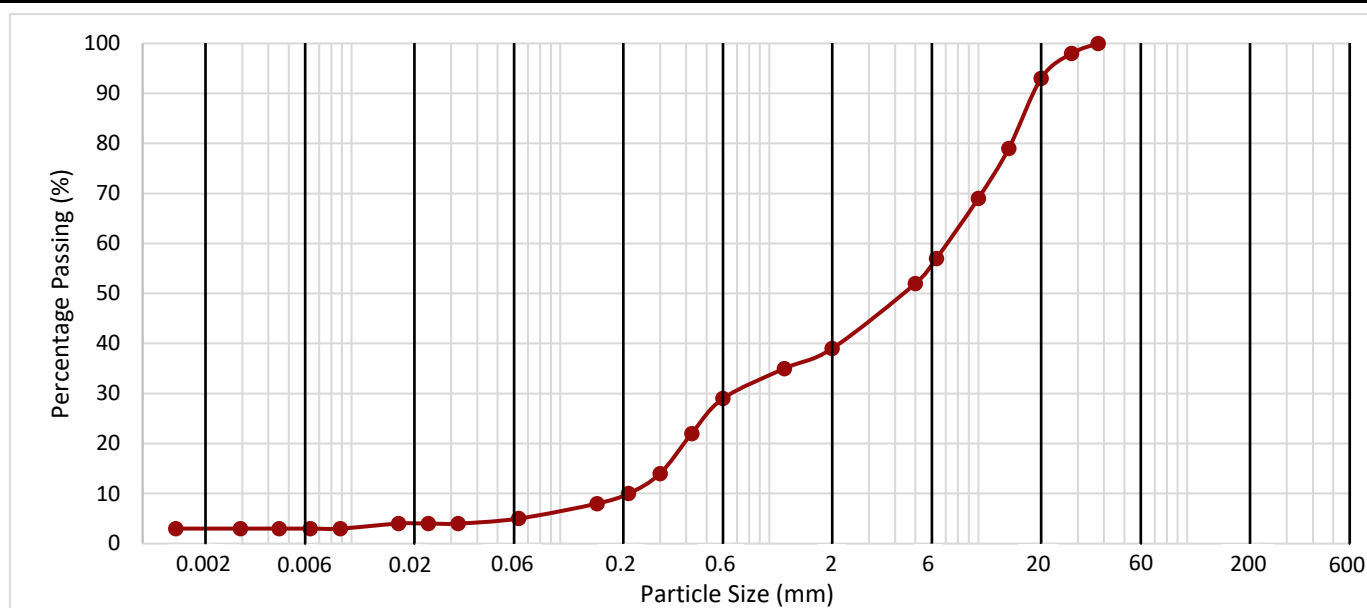


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## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                                                   | Remarks |
|--------------------|-------------|--------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                                                               |         |
| WS07               | 1.00 - 1.50 | U      | 2         | Brown, black and white angular to sub rounded chert and rare light brown sandstone slightly clayey slightly silty very sandy GRAVEL. Sand is brownish yellow. |         |

Method of Test: **Wet Sieve + Hydrometer** Method of Pretreatment: **Not required**



|      |      |        |        |      |        |        |        |        |        |         |          |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 0.0324             | 4           | 2                    |
|                                                | 0.0233             | 4           |                      |
|                                                | 0.0168             | 4           |                      |
|                                                | 0.0088             | 3           | Clay by Dry Mass (%) |
|                                                | 0.0063             | 3           |                      |
|                                                | 0.0045             | 3           |                      |
|                                                | 0.0029             | 3           | 3                    |
|                                                | 0.0014             | 3           |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 39          | 34                   |
| 1.18            | 35          |                      |
| 0.600           | 29          |                      |
| 0.425           | 22          |                      |
| 0.300           | 14          |                      |
| 0.212           | 10          |                      |
| 0.150           | 8           |                      |
| 0.063           | 5           |                      |

| Fines By Dry Mass (%) |   |
|-----------------------|---|
| <0.063mm              | 5 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 61                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            | 100         |                      |
| 28              | 98          |                      |
| 20              | 93          |                      |
| 14              | 79          |                      |
| 10              | 69          |                      |
| 6.3             | 57          |                      |
| 5               | 52          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2,9.5  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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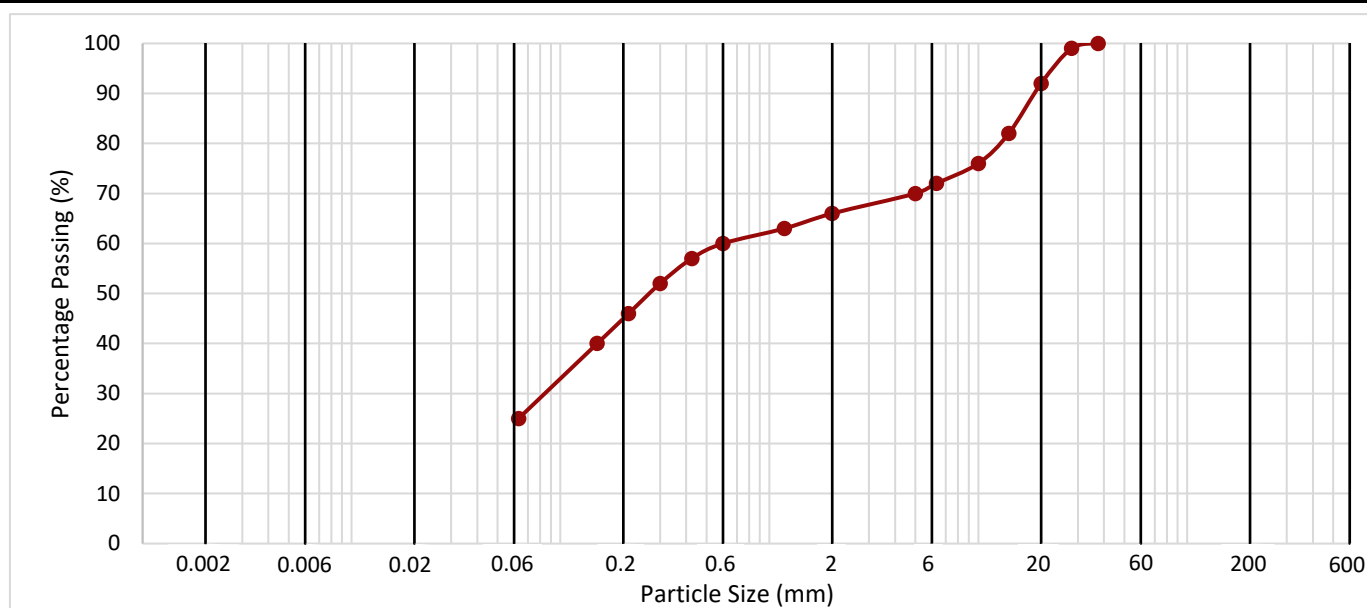
## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                                        | Remarks                                              |
|--------------------|-------------|--------|-----------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
|                    |             | Type   | Reference |                                                                                                                                    |                                                      |
| WS09               | 0.60 - 0.95 | U      | 1         | Greyish brown slightly gravelly sandy silty CLAY/ very clayey SAND. Gravel is brown, black and white angular to sub rounded chert. | Description based on possible engineering behaviour. |

Method of Test: Wet Sieve

Method of Pretreatment:

Not required



| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 0.075              |             |                      |
|                                                | 0.15               |             |                      |
|                                                | 0.3                |             |                      |
|                                                | 0.6                |             |                      |
|                                                | 1.2                |             |                      |
|                                                | 2.5                |             |                      |
|                                                | 5.0                |             |                      |
|                                                | Particle Size (mm) | Passing (%) | Clay by Dry Mass (%) |
|                                                | 0.075              |             |                      |
|                                                | 0.15               |             |                      |
|                                                | 0.3                |             |                      |
|                                                | 0.6                |             |                      |
|                                                | 1.2                |             |                      |
|                                                | 2.5                |             |                      |
|                                                | 5.0                |             |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 66          | 41                   |
| 1.18            | 63          |                      |
| 0.600           | 60          |                      |
| 0.425           | 57          |                      |
| 0.300           | 52          |                      |
| 0.212           | 46          |                      |
| 0.150           | 40          |                      |
| 0.063           | 25          |                      |

| Fines By Dry Mass (%) |    |
|-----------------------|----|
| <0.063mm              | 25 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 34                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            | 100         |                      |
| 28              | 99          |                      |
| 20              | 92          |                      |
| 14              | 82          |                      |
| 10              | 76          |                      |
| 6.3             | 72          |                      |
| 5               | 70          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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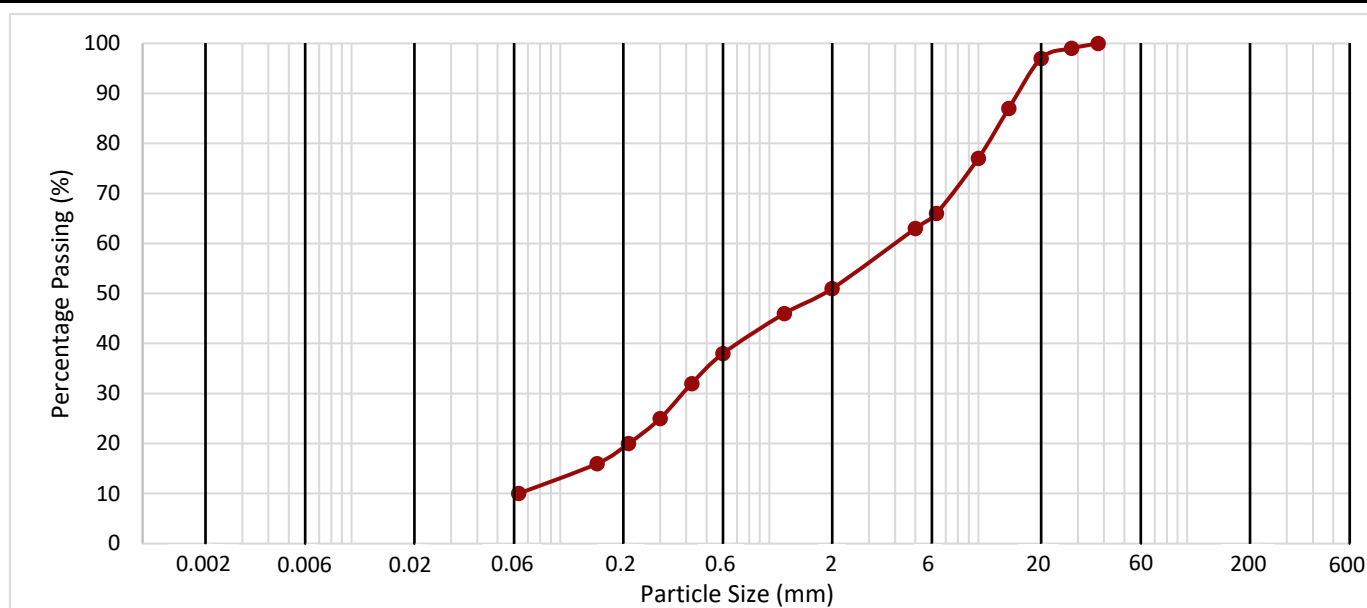
## DETERMINATION OF PARTICLE SIZE DISTRIBUTION

| Borehole / Pit No. | Depth (m)   | Sample |           | Description                                                                                                     | Remarks |
|--------------------|-------------|--------|-----------|-----------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Reference |                                                                                                                 |         |
| WS10               | 1.00 - 2.00 | U      | 2         | Brown, black and white angular to sub rounded clayey slightly silty very sandy GRAVEL. Sand is yellowish brown. |         |

Method of Test: Wet Sieve

Method of Pretreatment:

Not required



|      |      |        |        |      |        |        |        |        |        |         |          |
|------|------|--------|--------|------|--------|--------|--------|--------|--------|---------|----------|
| CLAY | Fine | Medium | Coarse | Fine | Medium | Coarse | Fine   | Medium | Coarse | COBBLES | BOULDERS |
|      | SILT |        |        | SAND |        |        | GRAVEL |        |        |         |          |

| H<br>y<br>d<br>r<br>o<br>m<br>e<br>t<br>e<br>r | Particle Size (mm) | Passing (%) | Silt by Dry Mass (%) |
|------------------------------------------------|--------------------|-------------|----------------------|
|                                                | 2.00               |             |                      |
|                                                | 1.18               |             |                      |
|                                                | 0.600              |             |                      |
|                                                | 0.425              |             |                      |
|                                                | 0.300              |             |                      |
|                                                | 0.212              |             |                      |
|                                                | 0.150              |             |                      |
|                                                | Particle Size (mm) | Passing (%) | Clay by Dry Mass (%) |
|                                                | 2.00               |             |                      |
|                                                | 1.18               |             |                      |
|                                                | 0.600              |             |                      |
|                                                | 0.425              |             |                      |
|                                                | 0.300              |             |                      |
|                                                | 0.212              |             |                      |
|                                                | 0.150              |             |                      |

| Sieve Size (mm) | Passing (%) | Sand By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 2.00            | 51          | 41                   |
| 1.18            | 46          |                      |
| 0.600           | 38          |                      |
| 0.425           | 32          |                      |
| 0.300           | 25          |                      |
| 0.212           | 20          |                      |
| 0.150           | 16          |                      |
| 0.063           | 10          |                      |

| Fines By Dry Mass (%) |    |
|-----------------------|----|
| <0.063mm              | 10 |

| Sieve Size (mm) | Passing (%) | 2mm+ By Dry Mass (%) |
|-----------------|-------------|----------------------|
| 300             |             | 49                   |
| 125             |             |                      |
| 90              |             |                      |
| 63              |             |                      |
| 50              |             |                      |
| 37.5            | 100         |                      |
| 28              | 99          |                      |
| 20              | 97          |                      |
| 14              | 87          |                      |
| 10              | 77          |                      |
| 6.3             | 66          |                      |
| 5               | 63          |                      |

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5  
Method of test: BS1377: Part 2: 1990: 9.2  
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter  
Comments:



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| Contract:  | Observer Park |
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## DETERMINATION OF THE SULPHATE CONTENT AND pH OF SOIL AND GROUNDWATER

| Borehole / Pit No. | Depth (m)   | Sample |      | Conc. of Soluble SO <sub>3</sub> |                    | Calc'd                         | pH Value | % Sample Passing 2mm Sieve | Description                                                                                                                                                                                                     | Remarks |
|--------------------|-------------|--------|------|----------------------------------|--------------------|--------------------------------|----------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Ref. | Water Soluble 2:1 (g/L)          | Ground Water (g/L) | Conc. Of SO <sub>4</sub> (g/L) |          |                            |                                                                                                                                                                                                                 |         |
| WS01               | 0.30 - 1.00 | U      | 1    | 0.12                             |                    | 0.15                           | 6.0      | 91                         | Pale olive and locally brown slightly gravelly sandy silty CLAY. Gravel is brown, black and white angular to rounded chert and rare brown and white quartzite and chalk.                                        |         |
| WS01               | 2.60 - 3.00 | U      | 3    | 0.26                             |                    | 0.31                           | 7.2      | 100                        | Firm dark grey CLAY.                                                                                                                                                                                            |         |
| WS02               | 0.45 - 0.70 | U      | 1    | 0.08                             |                    | 0.09                           | 7.1      | 73                         | Very dark greyish brown slightly gravelly slightly sandy slightly organic silty CLAY with rare recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to sub rounded chert. |         |
| WS03               | 0.30 - 0.45 | U      | 1    | 0.08                             |                    | 0.10                           | 7.3      | 82                         | Soft light olive brown slightly gravelly slightly sandy silty CLAY with rare recently active roots. Gravel is brown, black, white and red fine to coarse angular to sub rounded brick and chert.                |         |
| WS03               | 2.50 - 2.80 | U      | 3    | 0.06                             |                    | 0.07                           | 7.2      | 47                         | Brown, black and white sub angular to sub rounded chert and rare yellowish brown sandstone slightly clayey slightly silty very sandy GRAVEL. Sand is brownish yellow.                                           |         |
| WS03               | 2.80 - 3.00 | U      | 3    | 0.22                             |                    | 0.26                           | 7.2      | 100                        | Firm dark grey CLAY.                                                                                                                                                                                            |         |
| WS05               | 0.10 - 0.45 | U      | 1    | 0.02                             |                    | 0.02                           | 6.3      | 57                         | Dark greyish brown slightly sandy gravelly slightly organic silty CLAY with frequent recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to sub rounded chert.           |         |
| WS05               | 1.00 - 2.00 | U      | 2    | 0.04                             |                    | 0.05                           | 6.7      | 60                         | Yellowish brown clayey slightly silty very gravelly SAND. Gravel is brown, black and white sub angular to sub rounded chert and rare yellowish brown sandstone.                                                 |         |

|                        |                                                                                                                                                                             |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method of Preparation: | BS1377: Part 1: 2016: 8.5, BS1377: Part 3: 1990: 5.3 Soil/Water Extract, 5.4 Groundwater                                                                                    |
| Method of Test:        | BS1377: Part 3: 1990: 5.5                                                                                                                                                   |
| Type of Sample Key:    | U= Undisturbed, B= Bulk, D= Disturbed, J= Jar, W= Water, SPT= Split Spoon Sample, C= Core Cutter                                                                            |
| Comments:              | <b>Test not UKAS accredited</b>                                                                                                                                             |
| Remarks to Include:    | Sample disturbance, loss of moisture, variation from test procedure, location, and origin of test specimen within original sample. Oven drying temperature if not 105-110C. |



# TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD  
DATE ISSUED: 18/04/2024

|            |               |
|------------|---------------|
| Contract:  | Observer Park |
| Serial No: | 44496_1       |

## DETERMINATION OF THE SULPHATE CONTENT AND pH OF SOIL AND GROUNDWATER

| Borehole / Pit No. | Depth (m)   | Sample |      | Conc. of Soluble SO <sub>3</sub> |                    | Calc'd                         | pH Value | % Sample Passing 2mm Sieve | Description                                                                                                                                                                                                                                  | Remarks |
|--------------------|-------------|--------|------|----------------------------------|--------------------|--------------------------------|----------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                    |             | Type   | Ref. | Water Soluble 2:1 (g/L)          | Ground Water (g/L) | Conc. Of SO <sub>4</sub> (g/L) |          |                            |                                                                                                                                                                                                                                              |         |
| WS07               | 0.40 - 0.90 | U      | 1    | 0.06                             |                    | 0.07                           | 5.1      | 95                         | Soft mottled light bluish grey, orangish brown and olive yellow slightly gravelly slightly sandy silty CLAY with occasional recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to sub rounded chert. |         |
| WS07               | 2.85 - 3.00 | U      | 3    | 0.31                             |                    | 0.37                           | 7.2      | 100                        | Soft dark grey CLAY with rare orange silt partings and rare shell traces.                                                                                                                                                                    |         |
| WS09               | 0.10 - 0.60 | U      | 1    | 0.06                             |                    | 0.07                           | 6.6      | 84                         | Very dark brownish grey slightly gravelly slightly sandy silty CLAY with occasional recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to sub rounded chert.                                         |         |
| WS10               | 1.00 - 2.00 | U      | 2    | 0.08                             |                    | 0.10                           | 6.7      | 51                         | Brown, black and white angular to sub rounded clayey slightly silty very sandy GRAVEL. Sand is yellowish brown.                                                                                                                              |         |
|                    |             |        |      |                                  |                    |                                |          |                            |                                                                                                                                                                                                                                              |         |
|                    |             |        |      |                                  |                    |                                |          |                            |                                                                                                                                                                                                                                              |         |
|                    |             |        |      |                                  |                    |                                |          |                            |                                                                                                                                                                                                                                              |         |
|                    |             |        |      |                                  |                    |                                |          |                            |                                                                                                                                                                                                                                              |         |

Method of Preparation: BS1377: Part 1: 2016: 8.5, BS1377: Part 3: 1990: 5.3 Soil/Water Extract, 5.4 Groundwater  
Method of Test: BS1377: Part 3: 1990: 5.5  
Type of Sample Key: U= Undisturbed, B= Bulk, D= Disturbed, J= Jar, W= Water, SPT= Split Spoon Sample, C= Core Cutter  
Comments: **Test not UKAS accredited**  
Remarks to Include: Sample disturbance, loss of moisture, variation from test procedure, location, and origin of test specimen within original sample. Oven drying temperature if not 105-110C.

## APPENDIX D

### Land Use Criteria Analysis & Contamination Testing Laboratory Results

- Criteria Analysis for Soil
- Laboratory Results
- WAC Certificates

|                                             |                                                             | Hole Identifier                         |                               | WS01                                                                                                                     |                      |                       | WS02            |                    | WS03                |                    |                    | WS04                      | WS05            |                    | WS06               | WS07               |                           |                           |                     |                     |                 |  |
|---------------------------------------------|-------------------------------------------------------------|-----------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------|-----------------|--------------------|---------------------|--------------------|--------------------|---------------------------|-----------------|--------------------|--------------------|--------------------|---------------------------|---------------------------|---------------------|---------------------|-----------------|--|
|                                             |                                                             | Sample Identifier                       |                               | ES1                                                                                                                      | U1                   | U3                    | ES1             | U1                 | ES1                 | U1                 | U3                 | U3                        | ES1             | ES1                | U1                 | U2                 | ES1                       | ES1                       | U1                  | U3                  |                 |  |
|                                             |                                                             | Date Sampled                            |                               | 02/04/2024                                                                                                               |                      |                       | 02/04/2024      |                    | 26/03/2024          |                    | 02/04/2024         |                           | 25/03/2024      |                    |                    | 02/04/2024         |                           | 02/04/2024                |                     | 25/03/2024          |                 |  |
|                                             |                                                             | Sample Depth (mbgl)                     |                               | 0.3 - 0.4                                                                                                                | 0.3 - 1.0            | 2.6 - 3.0             | 0.1 - 0.2       | 0.45 - 0.7         | 0.3 - 0.4           | 0.3 - 0.45         | 2.5 - 2.8          | 2.8 - 3.0                 | 0.7 - 0.8       | 0.2 - 0.3          | 0.1 - 0.45         | 1.0 - 2.0          | 1.3 - 1.4                 | 0.4 - 0.5                 | 0.4 - 0.9           | 2.85 - 3.0          |                 |  |
| Determinand                                 |                                                             | Assessment Criteria Source              | Detec Limit (mg/kg)           | Assessment Criteria (mg/kg) (Commercial)                                                                                 | Diamictic CLAY (RTD) | Diamictive CLAY (RTD) | Silty CLAY (LC) | MG (peaty TOPSOIL) | MG (peaty BACKFILL) | MG (clay backfill) | MG (clay backfill) | Slightly clayey S&G (RTD) | Silty CLAY (LC) | MG (peaty TOPSOIL) | MG (peaty TOPSOIL) | MG (peaty TOPSOIL) | Slightly clayey S&G (RTD) | Slightly clayey S&G (RTD) | MG (peaty backfill) | MG (peaty backfill) | Silty CLAY (LC) |  |
| Metals/Transition Metals                    | Group A : In-organic Contaminants Hazardous to Human Health |                                         |                               |                                                                                                                          |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |
|                                             | Arsenic - Inorganic                                         | CL:AIRE C4SL                            | 1                             | 640                                                                                                                      | 9.1                  |                       |                 | 8.3                |                     | 13                 |                    |                           |                 | 45                 | 6                  |                    |                           | 11                        | 5.6                 |                     |                 |  |
|                                             | Beryllium - Total                                           | LQM/CIEH S4UL                           | 0.06                          | 12                                                                                                                       | 0.53                 |                       |                 | 0.42               |                     | 0.53               |                    |                           |                 | 0.78               | 0.2                |                    |                           | 1                         | 0.24                |                     |                 |  |
|                                             | Boron - Total                                               | LQM/CIEH S4UL                           | 1                             | 240000                                                                                                                   | 4.8                  |                       |                 | 6.2                |                     | 8.8                |                    |                           |                 | 9.4                | 4                  |                    |                           | 8.8                       | 4.2                 |                     |                 |  |
|                                             | Cadmium - Total                                             | LQM/CIEH S4UL                           | 0.2                           | 190                                                                                                                      | 0.02                 |                       |                 | 0.2                |                     | 0.2                |                    |                           |                 | 0.2                | 0.2                |                    |                           | 0.2                       | 0.2                 |                     |                 |  |
|                                             | Chromium - VI                                               | LQM/CIEH S4UL                           | 1.8                           | 33                                                                                                                       | 1.8                  |                       |                 | 1.8                |                     | 1.8                |                    |                           |                 | 1.8                | 1.8                |                    |                           | 1.8                       | 1.8                 |                     |                 |  |
|                                             | Chromium - Total (III)                                      | LQM/CIEH S4UL                           | 1                             | 8600                                                                                                                     | 17                   |                       |                 | 17                 |                     | 25                 |                    |                           |                 | 34                 | 12                 |                    |                           | 28                        | 11                  |                     |                 |  |
|                                             | Copper - Total                                              | LQM/CIEH S4UL                           | 1                             | 68000                                                                                                                    | 3.6                  |                       |                 | 6.7                |                     | 12                 |                    |                           |                 | 9.5                | 9.4                |                    |                           | 9.9                       | 6                   |                     |                 |  |
|                                             | Lead - Total                                                | CL:AIRE C4SL                            | 1                             | 2300                                                                                                                     | 11                   |                       |                 | 15                 |                     | 18                 |                    |                           |                 | 8.4                | 21                 |                    |                           | 7.7                       | 12                  |                     |                 |  |
|                                             | Mercury - Inorganic                                         | LQM/CIEH S4UL                           | 0.3                           | 1100                                                                                                                     | 0.3                  |                       |                 | 0.3                |                     | 0.3                |                    |                           |                 | 0.3                | 0.3                |                    |                           | 0.3                       | 3                   |                     |                 |  |
|                                             | Nickel - Total                                              | LQM/CIEH S4UL                           | 1                             | 980                                                                                                                      | 4.9                  |                       |                 | 6.7                |                     | 8.7                |                    |                           |                 | 9.4                | 4.7                |                    |                           | 23                        | 3.8                 |                     |                 |  |
|                                             | Selenium - Total                                            | LQM/CIEH S4UL                           | 1                             | 12000                                                                                                                    | 1                    |                       |                 | 1                  |                     | 1                  |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
|                                             | Vanadium - Total                                            | LQM/CIEH S4UL                           | 1                             | 9000                                                                                                                     | 31                   |                       |                 | 26                 |                     | 39                 |                    |                           |                 | 73                 | 16                 |                    |                           | 43                        | 17                  |                     |                 |  |
| Zinc - Total                                | LQM/CIEH S4UL                                               | 1                                       | 730000                        | 34                                                                                                                       |                      |                       | 40              |                    | 49                  |                    |                    |                           | 22              | 23                 |                    |                    | 25                        | 16                        |                     |                     |                 |  |
| Non-Metals                                  | Non Metals:                                                 |                                         |                               |                                                                                                                          |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |
|                                             | Phenols - Monohydric (SOM dependent: @ 1%)                  | LQM/CIEH S4UL                           | 1                             | 440                                                                                                                      | 1                    |                       |                 | 1                  |                     | 1                  |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
|                                             | Cyanide - Free                                              | Dutch Int                               | 1                             | 20                                                                                                                       | 1                    |                       |                 | 1                  |                     | 1                  |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
|                                             | Sulphide                                                    | ICRCL                                   | 1                             | 1000                                                                                                                     | 1                    |                       |                 | 1                  |                     | 2.8                |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
| Organics : Hazardous to Health              |                                                             |                                         |                               |                                                                                                                          |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |
| Polycyclic Aromatic Hydrocarbons            | * Naphthalene (SOM dependent: @ 1%)                         | LQM/CIEH S4UL                           | 0.05                          | 190                                                                                                                      | 0.05                 |                       |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Acenaphthylene (SOM dependent: @ 1%)                        | LQM/CIEH S4UL                           | 0.05                          | 83000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Acenaphthene (SOM dependent: @ 1%)                          | LQM/CIEH S4UL                           | 0.05                          | 84000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Fluorene (SOM dependent: @ 1%)                              | LQM/CIEH S4UL                           | 0.05                          | 63000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Phenanthrene (SOM dependent: @ 1%)                        | LQM/CIEH S4UL                           | 0.05                          | 22000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.24               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Anthracene (SOM dependent: @ 1%)                          | LQM/CIEH S4UL                           | 0.05                          | 520000                                                                                                                   | 0.05                 |                       |                 | 0.05               |                     | 0.09               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Fluoranthene (SOM dependent: @ 1%)                        | LQM/CIEH S4UL                           | 0.05                          | 23000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.84               |                    |                           |                 | 0.05               | 0.07               |                    |                           | 0.07                      | 0.07                |                     |                 |  |
|                                             | Pyrene (SOM dependent: @ 1%)                                | LQM/CIEH S4UL                           | 0.05                          | 54000                                                                                                                    | 0.05                 |                       |                 | 0.05               |                     | 0.81               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Benzo[a]anthracene (SOM dependent: @ 1%)                  | LQM/CIEH S4UL                           | 0.05                          | 170                                                                                                                      | 0.05                 |                       |                 | 0.05               |                     | 0.56               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Chrysene (SOM dependent: @ 1%)                            | LQM/CIEH S4UL                           | 0.05                          | 350                                                                                                                      | 0.05                 |                       |                 | 0.05               |                     | 0.55               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Benzo[b]fluoranthene (SOM dependent: @ 1%)                  | LQM/CIEH S4UL                           | 0.05                          | 44                                                                                                                       | 0.05                 |                       |                 | 0.05               |                     | 0.73               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Benzo[k]fluoranthene (SOM dependent: @ 1%)                | LQM/CIEH S4UL                           | 0.05                          | 1200                                                                                                                     | 0.05                 |                       |                 | 0.05               |                     | 0.38               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Benzo[a]pyrene (SOM dependent: @ 1%)                      | LQM/CIEH S4UL                           | 0.05                          | 35                                                                                                                       | 0.05                 |                       |                 | 0.05               |                     | 0.63               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Indeno[123-cd]pyrene (SOM dependent: @ 1%)                | LQM/CIEH S4UL                           | 0.05                          | 500                                                                                                                      | 0.05                 |                       |                 | 0.05               |                     | 0.36               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Dibenzo[ah]anthracene (SOM dependent: @ 1%)                 | LQM/CIEH S4UL                           | 0.05                          | 3.5                                                                                                                      | 0.05                 |                       |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | * Benzo[ghi]perylene (SOM dependent: @ 1%)                  | LQM/CIEH S4UL                           | 0.05                          | 3900                                                                                                                     | 0.05                 |                       |                 | 0.05               |                     | 0.39               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             | Total (US EPA 16) PAH (sum of 10*)                          | DUTCH INT                               | 0.8                           | 40                                                                                                                       | 0.5                  |                       |                 | 0.05               |                     | 4.09               |                    |                           |                 | 0.5                | 0.52               |                    |                           | 0.52                      | 0.52                |                     |                 |  |
|                                             | Total Petroleum Hydrocarbons (Fuel/Oil) (TPH)               | Aliphatics                              | C5 - C6 (SOM dependent: @ 1%) | LQM/CIEH GAC                                                                                                             | 0.02                 | 3200                  | 0.02            |                    | 0.02                |                    | 0.02               |                           |                 |                    | 0.02               | 0.02               |                           |                           | 0.02                | 0.02                |                 |  |
|                                             |                                                             |                                         | C6 - C8 (SOM dependent: @ 1%) | LQM/CIEH GAC                                                                                                             | 0.02                 | 7800                  | 0.02            |                    | 0.02                |                    | 0.02               |                           |                 |                    | 0.02               | 0.02               |                           |                           | 0.02                | 0.02                |                 |  |
|                                             |                                                             |                                         | C8-C10 (SOM dependent: @ 1%)  | LQM/CIEH GAC                                                                                                             | 0.05                 | 2000                  | 0.05            |                    | 0.05                |                    | 0.05               |                           |                 |                    | 0.05               | 0.05               |                           |                           | 0.05                | 0.05                |                 |  |
| C10-C12 (SOM dependent: @ 1%)               |                                                             |                                         | LQM/CIEH GAC                  | 1                                                                                                                        | 9700                 | 1                     |                 | 1                  |                     | 1                  |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
| C12-C16 (SOM dependent: @ 1%)               |                                                             |                                         | LQM/CIEH GAC                  | 2                                                                                                                        | 59000                | 2                     |                 | 2                  |                     | 2                  |                    |                           |                 | 2                  | 2                  |                    |                           | 2                         | 2                   |                     |                 |  |
| C16-C21 (SOM dependent: @ 1%)               |                                                             |                                         | LQM/CIEH GAC                  | 8                                                                                                                        | 800000               | 8                     |                 | 8                  |                     | 8                  |                    |                           |                 | 8                  | 8                  |                    |                           | 8                         | 8                   |                     |                 |  |
| C21-C35 (SOM dependent: @ 1%)               |                                                             |                                         | LQM/CIEH GAC                  | 8                                                                                                                        | 800000               | 8                     |                 | 8                  |                     | 8                  |                    |                           |                 | 8                  | 8.1                |                    |                           | 8                         | 8                   |                     |                 |  |
| C5-C7 (Benzene) (SOM dependent: @ 1%)       |                                                             |                                         | LQM/CIEH GAC                  | 0.01                                                                                                                     | 26000                | 0.01                  |                 | 0.01               |                     | 0.01               |                    |                           |                 | 0.01               | 0.01               |                    |                           | 0.01                      | 0.01                |                     |                 |  |
| Aromatics                                   |                                                             | C7 - C8 (Toluene) (SOM dependent: @ 1%) | LQM/CIEH GAC                  | 0.01                                                                                                                     | 56000                | 0.01                  |                 | 0.01               |                     | 0.01               |                    |                           |                 | 0.01               | 0.01               |                    |                           | 0.01                      | 0.01                |                     |                 |  |
|                                             |                                                             | C8-C10 (SOM dependent: @ 1%)            | LQM/CIEH GAC                  | 0.05                                                                                                                     | 3500                 | 0.05                  |                 | 0.05               |                     | 0.05               |                    |                           |                 | 0.05               | 0.05               |                    |                           | 0.05                      | 0.05                |                     |                 |  |
|                                             |                                                             | C10-C12 (SOM dependent: @ 1%)           | LQM/CIEH GAC                  | 1                                                                                                                        | 16000                | 1                     |                 | 1                  |                     | 1                  |                    |                           |                 | 1                  | 1                  |                    |                           | 1                         | 1                   |                     |                 |  |
|                                             |                                                             | C12-C16 (SOM dependent: @ 1%)           | LQM/CIEH GAC                  | 2                                                                                                                        | 36000                | 2                     |                 | 2                  |                     | 2                  |                    |                           |                 | 2                  | 2                  |                    |                           | 2                         | 2                   |                     |                 |  |
|                                             |                                                             | C16-C21 (SOM dependent: @ 1%)           | LQM/CIEH GAC                  | 10                                                                                                                       | 28000                | 10                    |                 | 10                 |                     | 10                 |                    |                           |                 | 10                 | 10                 |                    |                           | 10                        | 10                  |                     |                 |  |
|                                             |                                                             | C21-C35 (SOM dependent: @ 1%)           | LQM/CIEH GAC                  | 10                                                                                                                       | 28000                | 10                    |                 | 10                 |                     | 11                 |                    |                           |                 | 10                 | 10                 |                    |                           | 10                        | 10                  |                     |                 |  |
| BTEX (VOCs)                                 | Benzene (SOM dependent: @ 1%)                               | LQM/CIEH S4UL                           | 0.005                         | 27                                                                                                                       | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
|                                             | Ethylbenzene (SOM dependent: @ 1%)                          | LQM/CIEH S4UL                           | 0.005                         | 5700                                                                                                                     | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
|                                             | MTBE (SOM dependent: @ 1%)                                  | CL:AIRE C4SL                            | 0.005                         | 7900                                                                                                                     | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
|                                             | Toluene (SOM dependent: @ 1%)                               | LQM/CIEH S4UL                           | 0.005                         | 56000                                                                                                                    | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
|                                             | m&p Xylene (SOM dependent: @ 1%)                            | LQM/CIEH S4UL                           | 0.005                         | 5900                                                                                                                     | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
|                                             | O-Xylene (SOM dependent: @ 1%)                              | LQM/CIEH S4UL                           | 0.005                         | 6600                                                                                                                     | 0.005                |                       | 0.005           |                    | 0.005               |                    |                    |                           | 0.005           | 0.005              |                    |                    | 0.005                     | 0.005                     |                     |                     |                 |  |
| BRE SD1 - Brownfield : mobile (groundwater) |                                                             |                                         |                               | Sulphate Design Class: DS-1 / Aggressive Chemical Environmental : AC-3z / Concrete Design Class: DC-3z (consider zoning) |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |
| pH                                          | BRE SD1                                                     |                                         | 5.5                           | 6.8                                                                                                                      | 6                    | 7.2                   | 6.3             | 7.1                | 8.2                 | 7.3                | 7.2                | 7.2                       | 5.4             | 6.6                | 6.3                | 6.7                | 6.3                       | 6.4                       | 5.1                 | 7.2                 |                 |  |
| Total Sulphate as SO <sub>4</sub> - %       | BRE SD1                                                     |                                         | 0.24%                         | 0.042%                                                                                                                   |                      |                       |                 |                    |                     |                    |                    |                           | 0.030%          |                    |                    |                    | 0.015%                    |                           |                     |                     |                 |  |
| Sulphate (H <sub>2</sub> O soluble) - mg/l  | BRE SD1                                                     | 1.25                                    | 500                           | 159                                                                                                                      | 150                  | 310                   |                 | 90                 |                     | 100                | 70                 | 260                       | 38.3            |                    | 20                 | 50                 | 29.3                      |                           | 70                  | 370                 |                 |  |
| Others:                                     |                                                             |                                         |                               |                                                                                                                          |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |
| Soil Organic Matter (%)                     | None                                                        | 0.1                                     | None                          | 1.4%                                                                                                                     |                      |                       | 3.7%            |                    | 1.2%                |                    |                    |                           | 0.7%            | 5.3%               |                    |                    | 0.3%                      | 2.7%                      |                     |                     |                 |  |
| Moisture Content (%)                        | None                                                        | 0.01                                    | None                          | 12%                                                                                                                      |                      |                       | 20%             |                    | 13%                 |                    |                    |                           | 15%             | 21%                |                    |                    | 11%                       | 17%                       |                     |                     |                 |  |
| Asbestos ID                                 | None                                                        |                                         | None                          | ND                                                                                                                       |                      |                       | ND              |                    | -                   |                    |                    |                           | -               | -                  |                    |                    | -                         | -                         |                     |                     |                 |  |
| Asbestos Quantification                     | None                                                        |                                         | None                          |                                                                                                                          |                      |                       |                 |                    |                     |                    |                    |                           |                 |                    |                    |                    |                           |                           |                     |                     |                 |  |



|                                                             |                                              |                                         |               | WS09                       |               | WS10               |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
|-------------------------------------------------------------|----------------------------------------------|-----------------------------------------|---------------|----------------------------|---------------|--------------------|--------|------------------------------------------|--------|--------------------|--|--------------------|--|----------------------|--|---------------------------|--|
| Hole Identifier                                             |                                              |                                         |               | ES1                        |               | U1                 |        | ES1                                      |        | U2                 |  |                    |  |                      |  |                           |  |
| Sample Identifier                                           |                                              |                                         |               | 02/04/2024                 |               | 26/03/2024         |        | 02/04/2024                               |        | 25/03/2024         |  |                    |  |                      |  |                           |  |
| Date Sampled                                                |                                              |                                         |               | 0.1 - 0.2                  |               | 0.1 - 0.6          |        | 0.5 - 0.6                                |        | 1.0 - 2.0          |  |                    |  |                      |  |                           |  |
| Sample Depth (mbgl)                                         |                                              |                                         |               | 0.1 - 0.2                  |               | 0.1 - 0.6          |        | 0.5 - 0.6                                |        | 1.0 - 2.0          |  |                    |  |                      |  |                           |  |
| Determinand                                                 |                                              |                                         |               | Assessment Criteria Source |               | Dete Limit (mg/kg) |        | Assessment Criteria (mg/kg) (Commercial) |        | MG (peaty TOPSOIL) |  | MG (peaty TOPSOIL) |  | Diamictic CLAY (RTD) |  | Slightly clayey S&G (RTD) |  |
| Group A : In-organic Contaminants Hazardous to Human Health |                                              |                                         |               |                            |               |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
| Metals/Transition Metals                                    | Arsenic - Inorganic                          |                                         |               | CL:AIRE C4SL               | 1             | 640                | 5.8    |                                          | 11     |                    |  |                    |  |                      |  |                           |  |
|                                                             | Beryllium - Total                            |                                         |               | LQM/CIEH S4UL              | 0.06          | 12                 | 0.18   |                                          | 0.4    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Boron - Total                                |                                         |               | LQM/CIEH S4UL              | 1             | 240000             | 4      |                                          | 8.5    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Cadmium - Total                              |                                         |               | LQM/CIEH S4UL              | 0.2           | 190                | 0.2    |                                          | 0.2    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Chromium - VI                                |                                         |               | LQM/CIEH S4UL              | 1.8           | 33                 | 1.8    |                                          | 1.8    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Chromium - Total (III)                       |                                         |               | LQM/CIEH S4UL              | 1             | 8600               | 12     |                                          | 19     |                    |  |                    |  |                      |  |                           |  |
|                                                             | Copper - Total                               |                                         |               | LQM/CIEH S4UL              | 1             | 68000              | 13     |                                          | 5.3    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Lead - Total                                 |                                         |               | CL:AIRE C4SL               | 1             | 2300               | 22     |                                          | 7.1    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Mercury - Inorganic                          |                                         |               | LQM/CIEH S4UL              | 0.3           | 1100               | 0.3    |                                          | 0.3    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Nickel - Total                               |                                         |               | LQM/CIEH S4UL              | 1             | 980                | 4.6    |                                          | 6.2    |                    |  |                    |  |                      |  |                           |  |
|                                                             | Selenium - Total                             |                                         |               | LQM/CIEH S4UL              | 1             | 12000              | 1      |                                          | 1      |                    |  |                    |  |                      |  |                           |  |
|                                                             | Vanadium - Total                             |                                         |               | LQM/CIEH S4UL              | 1             | 9000               | 15     |                                          | 34     |                    |  |                    |  |                      |  |                           |  |
| Zinc - Total                                                |                                              |                                         | LQM/CIEH S4UL | 1                          | 730000        | 32                 |        | 20                                       |        |                    |  |                    |  |                      |  |                           |  |
| Non-Metals                                                  | Non Metals:                                  |                                         |               |                            |               |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
|                                                             | Phenols - Monohydric (SOM dependent: @ 1%)   |                                         |               | LQM/CIEH S4UL              | 1             | 440                | 1      |                                          | 1      |                    |  |                    |  |                      |  |                           |  |
|                                                             | Cyanide - Free                               |                                         |               | Dutch Int                  | 1             | 20                 | 1      |                                          | 1      |                    |  |                    |  |                      |  |                           |  |
|                                                             | Sulphide                                     |                                         |               | ICRCL                      | 1             | 1000               | 1      |                                          | 1      |                    |  |                    |  |                      |  |                           |  |
| Organics : Hazardous to Health                              |                                              |                                         |               |                            |               |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
| Polycyclic Aromatic Hydrocarbons                            | * Naphthalene (SOM dependent: @ 1%)          |                                         |               | LQM/CIEH S4UL              | 0.05          | 190                | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Acenaphthylene (SOM dependent: @ 1%)         |                                         |               | LQM/CIEH S4UL              | 0.05          | 83000              | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Acenaphthene (SOM dependent: @ 1%)           |                                         |               | LQM/CIEH S4UL              | 0.05          | 84000              | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Fluorene (SOM dependent: @ 1%)               |                                         |               | LQM/CIEH S4UL              | 0.05          | 63000              | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Phenanthrene (SOM dependent: @ 1%)         |                                         |               | LQM/CIEH S4UL              | 0.05          | 22000              | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Anthracene (SOM dependent: @ 1%)           |                                         |               | LQM/CIEH S4UL              | 0.05          | 520000             | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Fluoranthene (SOM dependent: @ 1%)         |                                         |               | LQM/CIEH S4UL              | 0.05          | 23000              | 0.07   |                                          | 0.07   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Pyrene (SOM dependent: @ 1%)                 |                                         |               | LQM/CIEH S4UL              | 0.05          | 54000              | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Benzo[a]anthracene (SOM dependent: @ 1%)   |                                         |               | LQM/CIEH S4UL              | 0.05          | 170                | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Chrysene (SOM dependent: @ 1%)             |                                         |               | LQM/CIEH S4UL              | 0.05          | 350                | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Benzo[b]fluoranthene (SOM dependent: @ 1%)   |                                         |               | LQM/CIEH S4UL              | 0.05          | 44                 | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Benzo[k]fluoranthene (SOM dependent: @ 1%) |                                         |               | LQM/CIEH S4UL              | 0.05          | 1200               | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Benzo[a]pyrene (SOM dependent: @ 1%)       |                                         |               | LQM/CIEH S4UL              | 0.05          | 35                 | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Indeno[123-cd]pyrene (SOM dependent: @ 1%) |                                         |               | LQM/CIEH S4UL              | 0.05          | 500                | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Dibenzo[ah]anthracene (SOM dependent: @ 1%)  |                                         |               | LQM/CIEH S4UL              | 0.05          | 3.5                | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | * Benzo[ghi]perylene (SOM dependent: @ 1%)   |                                         |               | LQM/CIEH S4UL              | 0.05          | 3900               | 0.05   |                                          | 0.05   |                    |  |                    |  |                      |  |                           |  |
|                                                             | Total (US EPA 16) PAH (sum of 10*)           |                                         |               |                            | DUTCH INT     | 0.8                | 40     | 0.52                                     |        | 0.52               |  |                    |  |                      |  |                           |  |
| Total Petroleum Hydrocarbons (Fuel/Oil) (TPH)               | Aliphatics                                   | C5 - C6 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 0.02               | 3200   | 0.02                                     |        | 0.02               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C6 - C8 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 0.02               | 7800   | 0.02                                     |        | 0.02               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C8-C10 (SOM dependent: @ 1%)            |               |                            | LQM/CIEH GAC  | 0.05               | 2000   | 0.05                                     |        | 0.05               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C10-C12 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 1                  | 9700   | 1                                        |        | 1                  |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C12-C16 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 2                  | 59000  | 2                                        |        | 2                  |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C16-C21 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 8                  | 800000 | 8                                        |        | 8                  |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C21-C35 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 8                  | 800000 | 8                                        |        | 8                  |  |                    |  |                      |  |                           |  |
|                                                             | Aromatics                                    | C5-C7 (Benzene) (SOM dependent: @ 1%)   |               |                            | LQM/CIEH GAC  | 0.01               | 26000  | 0.01                                     |        | 0.01               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C7 - C8 (Toluene) (SOM dependent: @ 1%) |               |                            | LQM/CIEH GAC  | 0.01               | 56000  | 0.01                                     |        | 0.01               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C8-C10 (SOM dependent: @ 1%)            |               |                            | LQM/CIEH GAC  | 0.05               | 3500   | 0.05                                     |        | 0.05               |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C10-C12 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 1                  | 16000  | 1                                        |        | 1                  |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C12-C16 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 2                  | 36000  | 2                                        |        | 2                  |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C16-C21 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 10                 | 28000  | 10                                       |        | 10                 |  |                    |  |                      |  |                           |  |
|                                                             |                                              | C21-C35 (SOM dependent: @ 1%)           |               |                            | LQM/CIEH GAC  | 10                 | 28000  | 10                                       |        | 10                 |  |                    |  |                      |  |                           |  |
|                                                             | BTX (VOCs)                                   | Benzene (SOM dependent: @ 1%)           |               |                            | LQM/CIEH S4UL | 0.005              | 27     | 0.005                                    |        | 0.005              |  |                    |  |                      |  |                           |  |
|                                                             |                                              | Ethylbenzene (SOM dependent: @ 1%)      |               |                            | LQM/CIEH S4UL | 0.005              | 5700   | 0.005                                    |        | 0.005              |  |                    |  |                      |  |                           |  |
|                                                             |                                              | MTBE (SOM dependent: @ 1%)              |               |                            | CL:AIRE C4SL  | 0.005              | 7900   | 0.005                                    |        | 0.005              |  |                    |  |                      |  |                           |  |
| Toluene (SOM dependent: @ 1%)                               |                                              |                                         | LQM/CIEH S4UL | 0.005                      | 56000         | 0.005              |        | 0.005                                    |        |                    |  |                    |  |                      |  |                           |  |
| M&P Xylene (SOM dependent: @ 1%)                            |                                              |                                         | LQM/CIEH S4UL | 0.005                      | 5900          | 0.005              |        | 0.005                                    |        |                    |  |                    |  |                      |  |                           |  |
| O-Xylene (SOM dependent: @ 1%)                              |                                              |                                         | LQM/CIEH S4UL | 0.005                      | 6600          | 0.005              |        | 0.005                                    |        |                    |  |                    |  |                      |  |                           |  |
| BRE SD1 - Brownfield : mobile (groundwater)                 |                                              |                                         |               |                            |               |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
| pH                                                          |                                              |                                         | BRE SD1       |                            | 5.5           | 6.6                |        | 6.6                                      |        | 6.8                |  | 6.7                |  |                      |  |                           |  |
| Total Sulphate as SO <sub>4</sub> %                         |                                              |                                         | BRE SD1       |                            | 0.24%         |                    |        |                                          | 0.041% |                    |  |                    |  |                      |  |                           |  |
| Sulphate (H <sub>2</sub> O soluble) - mg/l                  |                                              |                                         | BRE SD1       | 1.25                       | 500           |                    |        | 70                                       |        | 128                |  | 100                |  |                      |  |                           |  |
| Others:                                                     |                                              |                                         |               |                            |               |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |
| Soil Organic Matter (%)                                     |                                              |                                         | None          | 0.1                        | None          | 6.7%               |        |                                          | 0.5%   |                    |  |                    |  |                      |  |                           |  |
| Moisture Content (%)                                        |                                              |                                         | None          | 0.01                       | None          | 13%                |        |                                          | 8%     |                    |  |                    |  |                      |  |                           |  |
| Asbestos ID                                                 |                                              |                                         | None          |                            | None          | ND                 |        |                                          | ND     |                    |  |                    |  |                      |  |                           |  |
| Asbestos Quantification                                     |                                              |                                         | None          |                            | None          |                    |        |                                          |        |                    |  |                    |  |                      |  |                           |  |

PRP

environmental

|                    |        |     |         |
|--------------------|--------|-----|---------|
| US <sub>95</sub> = | 20.426 | T = | 2.340   |
| US <sub>95</sub> = | 0.646  | T = | 1.507   |
| US <sub>95</sub> = | 7.972  | T = | 1.140   |
| US <sub>95</sub> = | 0.217  | T = | 0.333   |
| US <sub>95</sub> = | 1.800  | T = | #DIV/0! |
| US <sub>95</sub> = | 24.396 | T = | 1.573   |
| US <sub>95</sub> = | 10.337 | T = | 1.217   |
| US <sub>95</sub> = | 17.113 | T = | 1.308   |
| US <sub>95</sub> = | 1.158  | T = | 2.667   |
| US <sub>95</sub> = | 11.682 | T = | 2.225   |
| US <sub>95</sub> = | 1.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 43.968 | T = | 1.769   |
| US <sub>95</sub> = | 35.598 | T = | 1.625   |

|                    |       |     |         |
|--------------------|-------|-----|---------|
| US <sub>95</sub> = | 1.000 | T = | #DIV/0! |
| US <sub>95</sub> = | 1.000 | T = | #DIV/0! |
| US <sub>95</sub> = | 1.572 | T = | 2.667   |

|                    |        |     |         |
|--------------------|--------|-----|---------|
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.110  | T = | 2.667   |
| US <sub>95</sub> = | 0.063  | T = | 2.667   |
| US <sub>95</sub> = | 0.310  | T = | 2.621   |
| US <sub>95</sub> = | 0.292  | T = | 2.667   |
| US <sub>95</sub> = | 0.212  | T = | 2.667   |
| US <sub>95</sub> = | 0.209  | T = | 2.667   |
| US <sub>95</sub> = | 0.266  | T = | 2.667   |
| US <sub>95</sub> = | 0.155  | T = | 2.667   |
| US <sub>95</sub> = | 0.234  | T = | 2.667   |
| US <sub>95</sub> = | 0.149  | T = | 2.667   |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.158  | T = | 2.667   |
| US <sub>95</sub> = | 1.617  | T = | 1.907   |
| US <sub>95</sub> = | 0.020  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.020  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 1.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 2.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 8.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 8.032  | T = | 2.667   |
| US <sub>95</sub> = | 0.010  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.010  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.050  | T = | #DIV/0! |
| US <sub>95</sub> = | 1.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 2.000  | T = | #DIV/0! |
| US <sub>95</sub> = | 10.000 | T = | #DIV/0! |
| US <sub>95</sub> = | 10.318 | T = | 2.667   |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |
| US <sub>95</sub> = | 0.005  | T = | #DIV/0! |

1% SOM is assumed unless SOM% dictates other.

Statistical assessment in accordance with CLR7, 2002.

NB Where site-specific soil screening values (SSSV) given, based on Environment Agency CLEA methodology.

Above lowest BRE SD1 category

Not Detected

Result greater than the GAC

LoD higher than criterion

Statistical Outlier

ND

PRP Limited  
Catherine House  
Old Harborough Road  
Brixworth  
NN6 9BX

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404  
f: 01923 237404  
e: reception@i2analytical.com

e: karen.holton@prp.uk.com

## **Analytical Report Number : 24-012521**

|                             |                |                                                        |            |
|-----------------------------|----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Observer Park  | <b>Samples received on:</b>                            | 04/04/2024 |
| <b>Your job number:</b>     | 64065          | <b>Samples instructed on/<br/>Analysis started on:</b> | 04/04/2024 |
| <b>Your order number:</b>   | 64065          | <b>Analysis completed by:</b>                          | 10/04/2024 |
| <b>Report Issue Number:</b> | 1              | <b>Report issued on:</b>                               | 15/04/2024 |
| <b>Samples Analysed:</b>    | 9 soil samples |                                                        |            |

**Signed:**

Joanna Szwagrzak  
Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-012521  
Project / Site name: Observer Park  
Your Order No: 64065

| Lab Sample Number                       |  |  |  | 162679        | 162680             | 162681               | 162682        | 162683        |
|-----------------------------------------|--|--|--|---------------|--------------------|----------------------|---------------|---------------|
| Sample Reference                        |  |  |  | WS01          | WS02               | WS03                 | WS04          | WS05          |
| Sample Number                           |  |  |  | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                               |  |  |  | 0.30-0.40     | 0.10-0.20          | 0.30-0.40            | 0.70-0.80     | 0.20-0.30     |
| Date Sampled                            |  |  |  | 02/04/2024    | 02/04/2024         | 02/04/2024           | 02/04/2024    | 02/04/2024    |
| Time Taken                              |  |  |  | 0900          | 0900               | 0900                 | 0900          | 0900          |
| Analytical Parameter<br>(Soil Analysis) |  |  |  | Units         | Limit of detection | Accreditation Status |               |               |

|                               |    |      |      |       |       |       |       |       |
|-------------------------------|----|------|------|-------|-------|-------|-------|-------|
| Stone Content                 | %  | 0.1  | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | 12    | 20    | 13    | 15    | 21    |
| Total mass of sample received | kg | 0.1  | NONE | 0.4   | 0.4   | 0.3   | 0.4   | 0.3   |

#### Asbestos

|                                        |      |     |           |              |              |   |   |   |
|----------------------------------------|------|-----|-----------|--------------|--------------|---|---|---|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | Not-detected | Not-detected | - | - | - |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | KWB          | KWB          | - | - | - |

#### General Inorganics

|                                                                         |          |       |        |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|-------|--------|-------|-------|-------|-------|-------|
| pH (L099)                                                               | pH Units | N/A   | MCERTS | 6.8   | 6.3   | 8.2   | 5.4   | 6.6   |
| Total Cyanide                                                           | mg/kg    | 1     | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO <sub>4</sub>                                       | %        | 0.005 | MCERTS | 0.042 | -     | -     | 0.03  | -     |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5   | MCERTS | 320   | -     | -     | 77    | -     |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25  | MCERTS | 159   | -     | -     | 38.3  | -     |
| Sulphide                                                                | mg/kg    | 1     | MCERTS | < 1.0 | < 1.0 | 2.8   | < 1.0 | < 1.0 |
| Total Sulphur                                                           | mg/kg    | 50    | MCERTS | 240   | -     | -     | 150   | -     |
| Total Sulphur                                                           | %        | 0.005 | MCERTS | 0.024 | -     | -     | 0.015 | -     |
| Organic Matter (automated)                                              | %        | 0.1   | MCERTS | 1.4   | 3.7   | 1.2   | 0.7   | 5.3   |

#### Total Phenols

|                            |       |   |        |       |       |       |       |       |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |       |      |           |        |        |        |        |        |
|------------------------|-------|------|-----------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.05   | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.24   | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.09   | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.84   | < 0.05 | 0.07   |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.81   | < 0.05 | 0.05   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.56   | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.55   | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | 0.73   | < 0.05 | 0.05   |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | 0.38   | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.63   | < 0.05 | 0.05   |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.36   | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.39   | < 0.05 | < 0.05 |

#### Total PAH

|                             |       |     |           |        |        |      |        |        |
|-----------------------------|-------|-----|-----------|--------|--------|------|--------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | < 0.80 | < 0.80 | 5.63 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|-----------|--------|--------|------|--------|--------|

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Project / Site name: Observer Park

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|                                         |               |                    |                      |               |               |
|-----------------------------------------|---------------|--------------------|----------------------|---------------|---------------|
| Lab Sample Number                       | 162679        | 162680             | 162681               | 162682        | 162683        |
| Sample Reference                        | WS01          | WS02               | WS03                 | WS04          | WS05          |
| Sample Number                           | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                               | 0.30-0.40     | 0.10-0.20          | 0.30-0.40            | 0.70-0.80     | 0.20-0.30     |
| Date Sampled                            | 02/04/2024    | 02/04/2024         | 02/04/2024           | 02/04/2024    | 02/04/2024    |
| Time Taken                              | 0900          | 0900               | 0900                 | 0900          | 0900          |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation Status |               |               |

#### Heavy Metals / Metalloids

|                                    |       |      |        |       |       |       |       |       |
|------------------------------------|-------|------|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS | 9.1   | 8.3   | 13    | 45    | 6     |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.53  | 0.42  | 0.53  | 0.78  | 0.2   |
| Boron (total)                      | mg/kg | 1    | MCERTS | 4.8   | 6.2   | 8.8   | 9.4   | 4     |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent)              | mg/kg | 1.8  | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 17    | 17    | 25    | 34    | 12    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS | 3.6   | 6.7   | 12    | 9.5   | 9.4   |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS | 11    | 15    | 18    | 8.4   | 21    |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS | 4.9   | 6.7   | 8.7   | 9.4   | 4.7   |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 31    | 26    | 39    | 73    | 16    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS | 34    | 40    | 49    | 22    | 23    |

#### Petroleum Hydrocarbons

|                                             |       |      |        |         |         |         |         |         |
|---------------------------------------------|-------|------|--------|---------|---------|---------|---------|---------|
| TPHCWG - Aliphatic >C5 - C6 HS_1D_AL        | mg/kg | 0.02 | NONE   | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aliphatic >C6 - C8 HS_1D_AL        | mg/kg | 0.02 | NONE   | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aliphatic >C8 - C10 HS_1D_AL       | mg/kg | 0.05 | NONE   | < 0.050 | < 0.050 | < 0.050 | < 0.050 | < 0.050 |
| TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | 8.1     |
| TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    | < 10    |

|                                              |       |      |        |         |         |         |         |         |
|----------------------------------------------|-------|------|--------|---------|---------|---------|---------|---------|
| TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR        | mg/kg | 0.01 | NONE   | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR        | mg/kg | 0.01 | NONE   | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR       | mg/kg | 0.05 | NONE   | < 0.050 | < 0.050 | < 0.050 | < 0.050 | < 0.050 |
| TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | 11      | < 10    | < 10    |
| TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    | < 10    | 11      | < 10    | < 10    |

#### VOCs

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE   | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Benzene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Toluene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Ethylbenzene                       | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| p & m-Xylene                       | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| o-Xylene                           | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-012521

Project / Site name: Observer Park

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|                                         |               |                    |                         |               |
|-----------------------------------------|---------------|--------------------|-------------------------|---------------|
| Lab Sample Number                       | 162684        | 162685             | 162686                  | 162687        |
| Sample Reference                        | WS06          | WS07               | WS09                    | WS10          |
| Sample Number                           | None Supplied | None Supplied      | None Supplied           | None Supplied |
| Depth (m)                               | 1.30-1.40     | 0.40-0.50          | 0.10-0.20               | 0.50-0.60     |
| Date Sampled                            | 02/04/2024    | 02/04/2024         | 02/04/2024              | 02/04/2024    |
| Time Taken                              | 0900          | 0900               | 0900                    | 0900          |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |

|                               |    |      |      |       |       |       |       |
|-------------------------------|----|------|------|-------|-------|-------|-------|
| Stone Content                 | %  | 0.1  | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | 11    | 17    | 13    | 7.7   |
| Total mass of sample received | kg | 0.1  | NONE | 0.4   | 0.3   | 0.4   | 0.5   |

#### Asbestos

|                                        |      |     |           |   |   |              |              |
|----------------------------------------|------|-----|-----------|---|---|--------------|--------------|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | - | - | Not-detected | Not-detected |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | - | - | KWB          | KWB          |

#### General Inorganics

|                                                                         |          |       |        |       |       |       |       |
|-------------------------------------------------------------------------|----------|-------|--------|-------|-------|-------|-------|
| pH (L099)                                                               | pH Units | N/A   | MCERTS | 6.3   | 6.4   | 6.6   | 6.8   |
| Total Cyanide                                                           | mg/kg    | 1     | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO <sub>4</sub>                                       | %        | 0.005 | MCERTS | 0.015 | -     | -     | 0.041 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5   | MCERTS | 59    | -     | -     | 260   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25  | MCERTS | 29.3  | -     | -     | 128   |
| Sulphide                                                                | mg/kg    | 1     | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphur                                                           | mg/kg    | 50    | MCERTS | 83    | -     | -     | 160   |
| Total Sulphur                                                           | %        | 0.005 | MCERTS | 0.008 | -     | -     | 0.016 |
| Organic Matter (automated)                                              | %        | 0.1   | MCERTS | 0.3   | 2.7   | 6.7   | 0.5   |

#### Total Phenols

|                            |       |   |        |       |       |       |       |
|----------------------------|-------|---|--------|-------|-------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |       |      |           |        |        |        |        |
|------------------------|-------|------|-----------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

#### Total PAH

|                             |       |     |           |        |        |        |        |
|-----------------------------|-------|-----|-----------|--------|--------|--------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | < 0.80 | < 0.80 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|-----------|--------|--------|--------|--------|

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|                                         |               |                    |                      |               |
|-----------------------------------------|---------------|--------------------|----------------------|---------------|
| Lab Sample Number                       | 162684        | 162685             | 162686               | 162687        |
| Sample Reference                        | WS06          | WS07               | WS09                 | WS10          |
| Sample Number                           | None Supplied | None Supplied      | None Supplied        | None Supplied |
| Depth (m)                               | 1.30-1.40     | 0.40-0.50          | 0.10-0.20            | 0.50-0.60     |
| Date Sampled                            | 02/04/2024    | 02/04/2024         | 02/04/2024           | 02/04/2024    |
| Time Taken                              | 0900          | 0900               | 0900                 | 0900          |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation Status |               |

#### Heavy Metals / Metalloids

|                                    |       |      |        |       |       |       |       |
|------------------------------------|-------|------|--------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS | 11    | 5.6   | 5.8   | 11    |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 1     | 0.24  | 0.18  | 0.4   |
| Boron (total)                      | mg/kg | 1    | MCERTS | 8.8   | 4.2   | 4     | 8.5   |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS | < 0.2 | < 0.2 | 0.2   | < 0.2 |
| Chromium (hexavalent)              | mg/kg | 1.8  | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 28    | 11    | 12    | 19    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS | 9.9   | 6     | 13    | 5.3   |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS | 7.7   | 12    | 22    | 7.1   |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS | 23    | 3.8   | 4.6   | 6.2   |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 43    | 17    | 15    | 34    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS | 25    | 16    | 32    | 20    |

#### Petroleum Hydrocarbons

|                                             |       |      |        |         |         |         |         |
|---------------------------------------------|-------|------|--------|---------|---------|---------|---------|
| TPHCWG - Aliphatic >C5 - C6 HS_1D_AL        | mg/kg | 0.02 | NONE   | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aliphatic >C6 - C8 HS_1D_AL        | mg/kg | 0.02 | NONE   | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aliphatic >C8 - C10 HS_1D_AL       | mg/kg | 0.05 | NONE   | < 0.050 | < 0.050 | < 0.050 | < 0.050 |
| TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |

|                                              |       |      |        |         |         |         |         |
|----------------------------------------------|-------|------|--------|---------|---------|---------|---------|
| TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR        | mg/kg | 0.01 | NONE   | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR        | mg/kg | 0.01 | NONE   | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR       | mg/kg | 0.05 | NONE   | < 0.050 | < 0.050 | < 0.050 | < 0.050 |
| TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |

#### VOCs

|                                    |       |   |        |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE   | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Benzene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Toluene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Ethylbenzene                       | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| p & m-Xylene                       | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| o-Xylene                           | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 24-012521**

**Project / Site name: Observer Park**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description *                           |
|-------------------|------------------|---------------|-----------|------------------------------------------------|
| 162679            | WS01             | None Supplied | 0.30-0.40 | Brown sandy clay                               |
| 162680            | WS02             | None Supplied | 0.10-0.20 | Brown loam and clay with gravel and vegetation |
| 162681            | WS03             | None Supplied | 0.30-0.40 | Brown loam and clay with gravel and vegetation |
| 162682            | WS04             | None Supplied | 0.70-0.80 | Brown sandy clay with gravel                   |
| 162683            | WS05             | None Supplied | 0.20-0.30 | Brown loam and clay with gravel and vegetation |
| 162684            | WS06             | None Supplied | 1.30-1.40 | Brown sandy clay with gravel                   |
| 162685            | WS07             | None Supplied | 0.40-0.50 | Brown sandy clay with gravel                   |
| 162686            | WS09             | None Supplied | 0.10-0.20 | Brown loam and clay with gravel and vegetation |
| 162687            | WS10             | None Supplied | 0.50-0.60 | Brown sandy clay with gravel                   |

**Analytical Report Number : 24-012521**

**Project / Site name: Observer Park**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                                                        | Analytical Method Description                                                                                                                                         | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Asbestos identification in Soil                                             | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques                                                 | In-house method based on HSG 248, 2021                                                                 | A001B         | D                  | ISO 17025            |
| Organic matter (Automated) in soil                                          | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)                   | In-house method                                                                                        | L009B         | D                  | MCERTS               |
| Sulphide in soil                                                            | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode | In-house method                                                                                        | L010          | D                  | MCERTS               |
| Moisture Content                                                            | Moisture content, determined gravimetrically (up to 30°C)                                                                                                             | In-house method                                                                                        | L019B         | W                  | NONE                 |
| Stones content of soil                                                      | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight                                            | In-house method based on British Standard Methods and MCERTS requirements.                             | L019B         | D                  | NONE                 |
| Metals in soil by ICP-OES                                                   | Determination of metals in soil by aqua-regia digestion followed by ICP-OES                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil                    | L038B         | D                  | MCERTS               |
| Total sulphate (as SO <sub>4</sub> in soil)                                 | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES                                                                                | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction)                          | Sulphate, water soluble, in soil (16hr extraction)                                                                                                                    | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Total Sulphur in soil                                                       | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES                                                   | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil        | Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS                                | In-house method based on USEPA 8270                                                                    | L064B         | D                  | MCERTS               |
| BTEX and/or Volatile organic compounds in soil                              | Determination of volatile organic compounds in soil by headspace GC-MS                                                                                                | In-house method based on USEPA 8260                                                                    | L073B         | W                  | MCERTS               |
| Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic                                                   | In-house method                                                                                        | L076B/L088    | D/W                | MCERTS               |
| Hexavalent chromium in soil                                                 | Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry                                      | In-house method                                                                                        | L080          | W                  | MCERTS               |
| Monohydric phenols in soil                                                  | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080          | W                  | MCERTS               |

**Analytical Report Number : 24-012521**

**Project / Site name: Observer Park**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name   | Analytical Method Description                                                                    | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Total cyanide in soil  | Determination of total cyanide by distillation followed by colorimetry                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080          | W                  | MCERTS               |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement | In-house method                                                                                        | L099          | D                  | MCERTS               |

**For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).**

**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**

**For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions                                                           |
|---------|------------------------------------------------------------------------|
| HS      | Headspace Analysis                                                     |
| MS      | Mass spectrometry                                                      |
| FID     | Flame Ionisation Detector                                              |
| GC      | Gas Chromatography                                                     |
| EH      | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU      | Clean-up - e.g. by Florisil®, silica gel                               |
| 1D      | GC - Single coil/column gas chromatography                             |
| 2D      | GC-GC - Double coil/column gas chromatography                          |
| Total   | Aliphatics & Aromatics                                                 |
| AL      | Aliphatics                                                             |
| AR      | Aromatics                                                              |
| #1      | EH_2D_Total but with humics mathematically subtracted                  |
| #2      | EH_2D_Total but with fatty acids mathematically subtracted             |
| -       | Operator - understore to separate acronyms (exception for +)           |
| +       | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total     |

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## **Analytical Report Number : 24-012489**

|                             |                                   |                                                        |            |
|-----------------------------|-----------------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Observer Park                     | <b>Samples received on:</b>                            | 04/04/2024 |
| <b>Your job number:</b>     | 64065                             | <b>Samples instructed on/<br/>Analysis started on:</b> | 04/04/2024 |
| <b>Your order number:</b>   | 64065                             | <b>Analysis completed by:</b>                          | 15/04/2024 |
| <b>Report Issue Number:</b> | 1                                 | <b>Report issued on:</b>                               | 15/04/2024 |
| <b>Samples Analysed:</b>    | 3 soil samples - 3 2stage samples |                                                        |            |



**Signed:** \_\_\_\_\_

Anna Goc  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

## i2 Analytical

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| Waste Acceptance Criteria Analytical Results                                                                         |               |           |  |                 |                                            |                                                               |                          |
|----------------------------------------------------------------------------------------------------------------------|---------------|-----------|--|-----------------|--------------------------------------------|---------------------------------------------------------------|--------------------------|
| Report No:                                                                                                           | 24-012489     |           |  |                 |                                            |                                                               |                          |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
|                                                                                                                      |               |           |  |                 | Client: PRPLTD                             |                                                               |                          |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
| Location                                                                                                             | Observer Park |           |  |                 |                                            |                                                               |                          |
| Lab Reference (Sample Number)                                                                                        | 162595        |           |  |                 | Landfill Waste Acceptance Criteria         |                                                               |                          |
|                                                                                                                      |               |           |  |                 | Limits                                     |                                                               |                          |
| Sampling Date                                                                                                        | 02/04/2024    |           |  |                 | Inert Waste Landfill                       | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |
| Sample ID                                                                                                            | WS01 D1       |           |  |                 |                                            |                                                               |                          |
| Depth (m)                                                                                                            | 0.10-0.20     |           |  |                 |                                            |                                                               |                          |
| Solid Waste Analysis                                                                                                 |               |           |  |                 |                                            |                                                               |                          |
| TOC (%)**                                                                                                            | 1.4           |           |  |                 | 3%                                         | 5%                                                            | 6%                       |
| Loss on Ignition (%) **                                                                                              | 3.4           |           |  |                 | --                                         | --                                                            | 10%                      |
| BTEX (µg/kg)**                                                                                                       | < 5.0         |           |  |                 | 6000                                       | --                                                            | --                       |
| Sum of PCBs (mg/kg)**                                                                                                | < 0.007       |           |  |                 | 1                                          | --                                                            | --                       |
| Mineral Oil (mg/kg) <small>EH, ID, CU, AL</small>                                                                    | < 10          |           |  |                 | 500                                        | --                                                            | --                       |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 5.32          |           |  |                 | 100                                        | --                                                            | --                       |
| pH (units)**                                                                                                         | 7.5           |           |  |                 | --                                         | >6                                                            | --                       |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 2.0           |           |  |                 | --                                         | To be evaluated                                               | To be evaluated          |
| Eluate Analysis                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | 2:1           | 8:1       |  | Cumulative 10:1 | Limit values for compliance leaching test  |                                                               |                          |
|                                                                                                                      |               |           |  |                 | using BS EN 12457-3 at L/S 10 l/kg (mg/kg) |                                                               |                          |
|                                                                                                                      | mg/l          | mg/l      |  | mg/kg           |                                            |                                                               |                          |
| Arsenic *                                                                                                            | < 0.0020      | < 0.0020  |  | < 0.020         | 0.5                                        | 2                                                             | 25                       |
| Barium *                                                                                                             | 0.074         | 0.033     |  | 0.39            | 20                                         | 100                                                           | 300                      |
| Cadmium *                                                                                                            | 0.00013       | < 0.00010 |  | < 0.0010        | 0.04                                       | 1                                                             | 5                        |
| Chromium *                                                                                                           | < 0.00060     | 0.0032    |  | 0.028           | 0.5                                        | 10                                                            | 70                       |
| Copper *                                                                                                             | 0.047         | 0.040     |  | 0.41            | 2                                          | 50                                                            | 100                      |
| Mercury *                                                                                                            | < 0.00070     | < 0.0007  |  | < 0.0070        | 0.01                                       | 0.2                                                           | 2                        |
| Molybdenum *                                                                                                         | 0.014         | 0.0042    |  | 0.055           | 0.5                                        | 10                                                            | 30                       |
| Nickel *                                                                                                             | 0.0050        | 0.0035    |  | 0.037           | 0.4                                        | 10                                                            | 40                       |
| Lead *                                                                                                               | < 0.0017      | 0.0063    |  | 0.054           | 0.5                                        | 10                                                            | 50                       |
| Antimony *                                                                                                           | 0.0040        | < 0.0020  |  | < 0.020         | 0.06                                       | 0.7                                                           | 5                        |
| Selenium *                                                                                                           | < 0.0050      | < 0.0050  |  | < 0.050         | 0.1                                        | 0.5                                                           | 7                        |
| Zinc *                                                                                                               | 0.019         | 0.018     |  | 0.18            | 4                                          | 50                                                            | 200                      |
| Chloride *                                                                                                           | 7.2           | < 4.0     |  | 20              | 800                                        | 15000                                                         | 25000                    |
| Fluoride*                                                                                                            | 0.55          | 0.49      |  | 4.9             | 10                                         | 150                                                           | 500                      |
| Sulphate *                                                                                                           | 1300          | 110       |  | 2600            | 1000                                       | 20000                                                         | 50000                    |
| TDS*                                                                                                                 | 1100          | 190       |  | 3100            | 4000                                       | 60000                                                         | 100000                   |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.16        | < 0.13    |  | < 0.50          | 1                                          | -                                                             | -                        |
| DOC                                                                                                                  | 24.1          | 12        |  | 139             | 500                                        | 800                                                           | 1000                     |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
| Leach Test Information                                                                                               |               |           |  |                 |                                            |                                                               |                          |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
| Stone Content (%)                                                                                                    | < 0.1         |           |  |                 |                                            |                                                               |                          |
| Sample Mass (kg)                                                                                                     | 0.6           |           |  |                 |                                            |                                                               |                          |
| Dry Matter (%)                                                                                                       | 85            |           |  |                 |                                            |                                                               |                          |
| Moisture (%)                                                                                                         | 15            |           |  |                 |                                            |                                                               |                          |
| Stage 1                                                                                                              |               |           |  |                 |                                            |                                                               |                          |
| Volume Eluate L2 (litres)                                                                                            | 0.337         |           |  |                 |                                            |                                                               |                          |
| Filtered Eluate VE1 (litres)                                                                                         | 0.23          |           |  |                 |                                            |                                                               |                          |
|                                                                                                                      |               |           |  |                 |                                            |                                                               |                          |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |               |           |  |                 |                                            |                                                               |                          |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |               |           |  |                 |                                            |                                                               |                          |
| ** = MCERTS accredited                                                                                               |               |           |  |                 |                                            |                                                               |                          |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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### Waste Acceptance Criteria Analytical Results

|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
|----------------------------------------------------------------------------------------------------------------------|---------------|-----------|--|---------------------------------------------------|--------------------------------------------|-----------------|-----------------|
| Report No:                                                                                                           | 24-012489     |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Location                                                                                                             | Observer Park |           |  |                                                   |                                            |                 |                 |
| Lab Reference (Sample Number)                                                                                        | 162596        |           |  |                                                   |                                            |                 |                 |
| Sampling Date                                                                                                        | 02/04/2024    |           |  |                                                   |                                            |                 |                 |
| Sample ID                                                                                                            | WS03 D1       |           |  |                                                   |                                            |                 |                 |
| Depth (m)                                                                                                            | 1.20-1.30     |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Solid Waste Analysis                                                                                                 |               |           |  |                                                   |                                            |                 |                 |
| TOC (%)**                                                                                                            | 0.2           |           |  |                                                   | 3%                                         | 5%              | 6%              |
| Loss on Ignition (%) **                                                                                              | 1.6           |           |  |                                                   | --                                         | --              | 10%             |
| BTEX (µg/kg)**                                                                                                       | < 5.0         |           |  |                                                   | 6000                                       | --              | --              |
| Sum of PCBs (mg/kg)**                                                                                                | < 0.007       |           |  |                                                   | 1                                          | --              | --              |
| Mineral Oil (mg/kg) <small>EH ID CU AL</small>                                                                       | < 10          |           |  |                                                   | 500                                        | --              | --              |
| Total PAH (WAC-17) (mg/kg)                                                                                           | < 0.85        |           |  |                                                   | 100                                        | --              | --              |
| pH (units)**                                                                                                         | 5.5           |           |  |                                                   | --                                         | >6              | --              |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | -15           |           |  |                                                   | --                                         | To be evaluated | To be evaluated |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Eluate Analysis                                                                                                      | 2:1           | 8:1       |  | Cumulative 10:1                                   | Limit values for compliance leaching test  |                 |                 |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l          | mg/l      |  | mg/kg                                             | using BS EN 12457-3 at L/S 10 l/kg (mg/kg) |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Arsenic *                                                                                                            | < 0.0020      | < 0.0020  |  | < 0.020                                           | 0.5                                        | 2               | 25              |
| Barium *                                                                                                             | 0.023         | 0.0034    |  | 0.061                                             | 20                                         | 100             | 300             |
| Cadmium *                                                                                                            | 0.00015       | < 0.00010 |  | < 0.0010                                          | 0.04                                       | 1               | 5               |
| Chromium *                                                                                                           | 0.00087       | < 0.00060 |  | < 0.0060                                          | 0.5                                        | 10              | 70              |
| Copper *                                                                                                             | 0.032         | 0.0042    |  | 0.080                                             | 2                                          | 50              | 100             |
| Mercury *                                                                                                            | < 0.00070     | < 0.0007  |  | < 0.0070                                          | 0.01                                       | 0.2             | 2               |
| Molybdenum *                                                                                                         | < 0.0014      | < 0.0014  |  | < 0.014                                           | 0.5                                        | 10              | 30              |
| Nickel *                                                                                                             | 0.019         | 0.0020    |  | 0.044                                             | 0.4                                        | 10              | 40              |
| Lead *                                                                                                               | < 0.0017      | < 0.0017  |  | < 0.017                                           | 0.5                                        | 10              | 50              |
| Antimony *                                                                                                           | 0.0027        | < 0.0020  |  | < 0.020                                           | 0.06                                       | 0.7             | 5               |
| Selenium *                                                                                                           | < 0.0050      | < 0.0050  |  | < 0.050                                           | 0.1                                        | 0.5             | 7               |
| Zinc *                                                                                                               | 0.035         | 0.012     |  | 0.15                                              | 4                                          | 50              | 200             |
| Chloride *                                                                                                           | 4.1           | < 4.0     |  | < 15                                              | 800                                        | 15000           | 25000           |
| Fluoride*                                                                                                            | 0.11          | < 0.050   |  | 0.40                                              | 10                                         | 150             | 500             |
| Sulphate *                                                                                                           | 48            | 8.2       |  | 140                                               | 1000                                       | 20000           | 50000           |
| TDS*                                                                                                                 | 92            | 16        |  | 260                                               | 4000                                       | 60000           | 100000          |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.16        | < 0.13    |  | < 0.50                                            | 1                                          | -               | -               |
| DOC                                                                                                                  | 4.74          | 3.0       |  | 32.8                                              | 500                                        | 800             | 1000            |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Leach Test Information                                                                                               |               |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Stone Content (%)                                                                                                    | < 0.1         |           |  |                                                   |                                            |                 |                 |
| Sample Mass (kg)                                                                                                     | 0.6           |           |  |                                                   |                                            |                 |                 |
| Dry Matter (%)                                                                                                       | 89            |           |  |                                                   |                                            |                 |                 |
| Moisture (%)                                                                                                         | 11            |           |  |                                                   |                                            |                 |                 |
| Stage 1                                                                                                              |               |           |  |                                                   |                                            |                 |                 |
| Volume Eluate L2 (litres)                                                                                            | 0.327         |           |  |                                                   |                                            |                 |                 |
| Filtered Eluate VE1 (litres)                                                                                         | 0.24          |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
|                                                                                                                      |               |           |  |                                                   |                                            |                 |                 |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |               |           |  | * = UKAS accredited (liquid eluate analysis only) |                                            |                 |                 |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |               |           |  | ** = MCERTS accredited                            |                                            |                 |                 |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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### Waste Acceptance Criteria Analytical Results

|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
|----------------------------------------------------------------------------------------------------------------------|---------------|-----------|--|-----------------|---------------------------------------------------|-----------------|-----------------|
| Report No:                                                                                                           | 24-012489     |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Location                                                                                                             | Observer Park |           |  |                 |                                                   |                 |                 |
| Lab Reference (Sample Number)                                                                                        | 162597        |           |  |                 |                                                   |                 |                 |
| Sampling Date                                                                                                        | 02/04/2024    |           |  |                 |                                                   |                 |                 |
| Sample ID                                                                                                            | WS04 D1       |           |  |                 |                                                   |                 |                 |
| Depth (m)                                                                                                            | 0.70-0.80     |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Solid Waste Analysis                                                                                                 |               |           |  |                 |                                                   |                 |                 |
| TOC (%)**                                                                                                            | 2.8           |           |  |                 | 3%                                                | 5%              | 6%              |
| Loss on Ignition (%) **                                                                                              | 5.8           |           |  |                 | --                                                | --              | 10%             |
| BTEX (µg/kg)**                                                                                                       | < 5.0         |           |  |                 | 6000                                              | --              | --              |
| Sum of PCBs (mg/kg)**                                                                                                | < 0.007       |           |  |                 | 1                                                 | --              | --              |
| Mineral Oil (mg/kg) <small>EH ID CU AL</small>                                                                       | < 10          |           |  |                 | 500                                               | --              | --              |
| Total PAH (WAC-17) (mg/kg)                                                                                           | < 0.85        |           |  |                 | 100                                               | --              | --              |
| pH (units)**                                                                                                         | 7.6           |           |  |                 | --                                                | >6              | --              |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 0.51          |           |  |                 | --                                                | To be evaluated | To be evaluated |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Eluate Analysis                                                                                                      | 2:1           | 8:1       |  | Cumulative 10:1 | Limit values for compliance leaching test         |                 |                 |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l          | mg/l      |  | mg/kg           | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)        |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Arsenic *                                                                                                            | 0.0040        | < 0.0020  |  | < 0.020         | 0.5                                               | 2               | 25              |
| Barium *                                                                                                             | 0.014         | 0.0044    |  | 0.050           | 20                                                | 100             | 300             |
| Cadmium *                                                                                                            | < 0.00010     | < 0.00010 |  | < 0.0010        | 0.04                                              | 1               | 5               |
| Chromium *                                                                                                           | 0.0039        | 0.0018    |  | 0.020           | 0.5                                               | 10              | 70              |
| Copper *                                                                                                             | 0.087         | 0.067     |  | 0.68            | 2                                                 | 50              | 100             |
| Mercury *                                                                                                            | < 0.00070     | < 0.0007  |  | < 0.0070        | 0.01                                              | 0.2             | 2               |
| Molybdenum *                                                                                                         | 0.0053        | 0.0014    |  | 0.017           | 0.5                                               | 10              | 30              |
| Nickel *                                                                                                             | 0.0051        | 0.0024    |  | 0.026           | 0.4                                               | 10              | 40              |
| Lead *                                                                                                               | 0.012         | 0.0031    |  | 0.037           | 0.5                                               | 10              | 50              |
| Antimony *                                                                                                           | < 0.0020      | < 0.0020  |  | < 0.020         | 0.06                                              | 0.7             | 5               |
| Selenium *                                                                                                           | < 0.0050      | < 0.0050  |  | < 0.050         | 0.1                                               | 0.5             | 7               |
| Zinc *                                                                                                               | 0.019         | 0.010     |  | 0.11            | 4                                                 | 50              | 200             |
| Chloride *                                                                                                           | < 4.0         | < 4.0     |  | 16              | 800                                               | 15000           | 25000           |
| Fluoride*                                                                                                            | 0.31          | 0.29      |  | 2.9             | 10                                                | 150             | 500             |
| Sulphate *                                                                                                           | 9.5           | 2.3       |  | 28              | 1000                                              | 20000           | 50000           |
| TDS*                                                                                                                 | 53            | 22        |  | 240             | 4000                                              | 60000           | 100000          |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.16        | < 0.13    |  | < 0.50          | 1                                                 | -               | -               |
| DOC                                                                                                                  | 28.7          | 20        |  | 202             | 500                                               | 800             | 1000            |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Leach Test Information                                                                                               |               |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Stone Content (%)                                                                                                    | < 0.1         |           |  |                 |                                                   |                 |                 |
| Sample Mass (kg)                                                                                                     | 0.5           |           |  |                 |                                                   |                 |                 |
| Dry Matter (%)                                                                                                       | 85            |           |  |                 |                                                   |                 |                 |
| Moisture (%)                                                                                                         | 15            |           |  |                 |                                                   |                 |                 |
| Stage 1                                                                                                              |               |           |  |                 |                                                   |                 |                 |
| Volume Eluate L2 (litres)                                                                                            | 0.318         |           |  |                 |                                                   |                 |                 |
| Filtered Eluate VE1 (litres)                                                                                         | 0.12          |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
|                                                                                                                      |               |           |  |                 |                                                   |                 |                 |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |               |           |  |                 | * = UKAS accredited (liquid eluate analysis only) |                 |                 |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |               |           |  |                 | ** = MCERTS accredited                            |                 |                 |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description *                           |
|-------------------|------------------|---------------|-----------|------------------------------------------------|
| 162595            | WS01             | D1            | 0.10-0.20 | Brown loam and clay with gravel and vegetation |
| 162596            | WS03             | D1            | 1.20-1.30 | Brown sand with gravel                         |
| 162597            | WS04             | D1            | 0.70-0.80 | Brown loam and clay with gravel and vegetation |

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**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                                                 | Analytical Method Description                                                                                                                       | Analytical Method Reference                                                                           | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| pH at 20°C in soil                                                   | Determination of pH in soil by addition of water followed by electrometric measurement                                                              | In-house method                                                                                       | L005B         | W                  | MCERTS               |
| Moisture Content                                                     | Moisture content, determined gravimetrically (up to 30°C)                                                                                           | In-house method                                                                                       | L019B         | W                  | NONE                 |
| Stones content of soil                                               | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight                          | In-house method based on British Standard Methods and MCERTS requirements.                            | L019B         | D                  | NONE                 |
| Total organic carbon in soil                                         | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method) | In-house method                                                                                       | L023B         | D                  | MCERTS               |
| PCB's By GC-MS in soil                                               | Determination of PCB by extraction with hexane followed by GC-MS                                                                                    | In-house method based on USEPA 8082                                                                   | L027B         | D                  | MCERTS               |
| TDS in WAC leachate (BS EN 12457-3 Prep)                             | Determination of total dissolved solids in leachate by electrometric measurement                                                                    | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.      | L031B         | W                  | ISO 17025            |
| Fluoride in WAC leachate (BS EN 12457-3 Prep)                        | Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode                                       | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.      | L033B         | W                  | ISO 17025            |
| DOC in WAC leachate (BS EN 12457-3 Prep)                             | Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser                                                                      | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.      | L037B         | W                  | NONE                 |
| Metals in WAC leachate (BS EN 12457-3 Prep)                          | Determination of metals in leachate by acidification followed by ICP-OES                                                                            | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed       | L039B         | W                  | ISO 17025            |
| Sulphate in WAC leachate (BS EN 12457-3 Prep)                        | Determination of sulphate in leachate by acidification followed by ICP-OES                                                                          | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed       | L039B         | W                  | ISO 17025            |
| Preparation WAC leachate                                             |                                                                                                                                                     | In-house method                                                                                       | L043B         | W                  | NONE                 |
| Acid neutralisation capacity of soil                                 | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe                                            | In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance | L046B         | W                  | NONE                 |
| Loss on ignition of soil @ 450°C                                     | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace                                      | In-house method                                                                                       | L047          | D                  | MCERTS               |
| Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil | Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS              | In-house method based on USEPA 8270                                                                   | L064B         | D                  | MCERTS               |
| BTEX and/or Volatile organic compounds in soil                       | Determination of volatile organic compounds in soil by headspace GC-MS                                                                              | In-house method based on USEPA 8260                                                                   | L073B         | W                  | MCERTS               |
| Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil              | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS                                                                            | In-house method                                                                                       | L076B/L088    | D/W                | NONE                 |

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**Project / Site name: Observer Park**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                              | Analytical Method Description                                               | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Phenol Index in WAC leachate (BS EN 12457-3 Prep) | Determination of monohydric phenols in leachate by continuous flow analyser | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080          | W                  | ISO 17025            |
| Chloride in WAC leachate (BS EN 12457-3 Prep)     | Determination of Chloride colorimetrically by discrete analyser             | In-house based on MEWAM Method ISBN 0117516260                                                         | L082B         | W                  | ISO 17025            |

**For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).**

**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**

**For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions                                                           |
|---------|------------------------------------------------------------------------|
| HS      | Headspace Analysis                                                     |
| MS      | Mass spectrometry                                                      |
| FID     | Flame Ionisation Detector                                              |
| GC      | Gas Chromatography                                                     |
| EH      | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU      | Clean-up - e.g. by Florisil®, silica gel                               |
| 1D      | GC - Single coil/column gas chromatography                             |
| 2D      | GC-GC - Double coil/column gas chromatography                          |
| Total   | Aliphatics & Aromatics                                                 |
| AL      | Aliphatics                                                             |
| AR      | Aromatics                                                              |
| #1      | EH_2D_Total but with humics mathematically subtracted                  |
| #2      | EH_2D_Total but with fatty acids mathematically subtracted             |
| _       | Operator - understore to separate acronyms (exception for +)           |
| +       | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total     |

## Sample Deviation Report



**Analytical Report Number : 24-012489**

**Project / Site name: Observer Park**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name                                                            | Test Ref   | Test Deviation |
|-----------|----------|-------------|-------------------|------------------|----------------------------------------------------------------------|------------|----------------|
| WS01      | D1       | S           | 162595            | b                | BTEX and/or Volatile organic compounds in soil                       | L073B      | b              |
| WS01      | D1       | S           | 162595            | b                | PCB's By GC-MS in soil                                               | L027B      | b              |
| WS01      | D1       | S           | 162595            | b                | Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil | L064B      | b              |
| WS01      | D1       | S           | 162595            | b                | Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil              | L076B/L088 | b              |
| WS03      | D1       | S           | 162596            | b                | BTEX and/or Volatile organic compounds in soil                       | L073B      | b              |
| WS03      | D1       | S           | 162596            | b                | PCB's By GC-MS in soil                                               | L027B      | b              |
| WS03      | D1       | S           | 162596            | b                | Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil | L064B      | b              |
| WS03      | D1       | S           | 162596            | b                | Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil              | L076B/L088 | b              |
| WS04      | D1       | S           | 162597            | b                | BTEX and/or Volatile organic compounds in soil                       | L073B      | b              |
| WS04      | D1       | S           | 162597            | b                | PCB's By GC-MS in soil                                               | L027B      | b              |
| WS04      | D1       | S           | 162597            | b                | Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil | L064B      | b              |
| WS04      | D1       | S           | 162597            | b                | Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil              | L076B/L088 | b              |

## APPENDIX E

### Assessment of Analysis of Contamination

#### UK Guidance

In the UK, the principal numerical criteria used to assess the results of geochemical testing of soil samples for potential contaminants and their significance to human health were the Soil Guideline Values (SGVs). These were published by the Department for the Environment, Food and Rural Affairs (DEFRA) in their Contaminated Land Research Reports Nos. 7-10 inclusive and were accompanied by the Research and Development (R&D) Publications (TOX and SGV series) also published by DEFRA in collaboration with and the Environment Agency (2002).

Additionally, between 2002 and 2005, Contaminated Land Exposure Assessment (CLEA) UK (beta) software was released along with briefing notes 1 to 4.

In 2006, DEFRA released "Soil Guideline Values - The Way Forward" in an attempt to clarify matters.

In August 2008, the EA published a revised CLEA framework guidance in SR2, 3 and 4, along with CLEA v1.03 (beta software), this software was a testing version and comments upon its usefulness were requested. The original SGVs were withdrawn together with CIR7-10, however, the accompanying TOX reports remained valid.

SGVs had been formulated to represent a combination of authoritative scientific and policy judgements. The scientific information includes human toxicological information on the health effects of different contaminants, and judgement on what is regarded as an "unacceptable risk".

Soil is only one source of contaminant exposure, and its effects need to be kept in proportion with total exposure from all sources.

Generic SGVs must be capable of use over a wide range of soil conditions and types of site. They are based on the underlying, albeit incomplete, science of contaminant behaviour, human activity patterns, and contaminant toxicology. Although these make the derivation of generally applicable criteria difficult, use of "worst-case" scenarios is more likely to result in impracticable or over-conservative criteria.

The SGVs are designed to generate a consistent approach to the investigation of contaminated land as well assisting with focusing resources on situations that require a more detailed assessment. Only the first of the R&D publications addressing individual contaminants, have so far been published, and these will be added to in due course. As indicated above, some of these publications have already been withdrawn, whilst some have been revised. Guidance on additional organic contaminants, in particular, is yet to be published.

DEFRA is actively promoting a site-specific risk assessment methodology to support professional judgement resulting in a site-specific assessment criterion (SSAC) for individual compounds. The Contaminated Land Exposure Assessment Model (CLEA) was originally detailed in CLR10 and is described in the conceptual exposure models for each standard land use used to derive the SGVs,

this was replaced by SR3 in August 2008 and then revised again in January 2009. The CLEA model itself was revised in January 2009 to v1.04 and a handbook (SR4) was also issued.

In late 2009, the LQM/CIEH (Land Quality Management/Chartered Institute of Environmental Health) Generic Assessment Criteria for Human Health Risk Assessment Second Edition was published, which provides Generic Assessment Criteria (GAC) values for the 'common' contaminants based upon the principles published by the EA and uses the CLEA model to define values.

Category 4 Screening Levels (C4SLs) were prepared by DEFRA under the Research Project SP1010 and published initially in 2013 as an interim report, with the final (revision 2) issued in 2014.

In early 2015, LQM/CIEH S4ULs ("suitable 4 use levels") for Human Health Risk Assessment was published providing clarification on S4ULs to be used for the assessment of risk posed to human health by contaminants in soil. Concentrations of contaminants above these levels indicate that further assessment of risk is required and not necessarily that a problem exists.

Contamination in near surface soils should be considered with respect to water supply pipes; initially risk guidance was supplied by Water Regulations Advisor Scheme (WRAS) but these have recently been replaced with guidance produced by United Kingdom Water Industry Research (UKWIR), however, some local water authorities still use the old guidance. For the purposes of this report, it is assumed that all water supply pipes will be in MDPE however, if other types of pipes are used then lower threshold values may be appropriate.

### **Contamination Assessment**

Each determinant, for which a published SGV/GAC exists, has a mean and standard deviation calculated followed by "T-test" statistical calculation (Mean Value and Maximum Value Tests). Reference is then made to the SGV for the individual determinant in order to assess the level of risk posed.

Assessment of the geochemical environment is based on guidance given in "Guidance on Comparing Soil Contamination Data with a Critical Concentration" (CIEH and Contaminated Land: Application in Real Environments [CL:aire], May 2008), SR2, 3 and 4 inclusive, SGVs and Human Toxicity (TOX) R&D Reports (EA, 2002 to 2005).

The samples recovered from site were found to be relevant, sufficient, reliable and transparent based upon the requirements indicated within "Guidance on Comparing Soil Contamination Data with a Critical Concentration". As the Site is being assessed under the planning scenario, the critical question that needs to be answered is "Is there sufficient evidence that the true mean concentration of substance X (U) is less than the critical concentration (Cc)?"

Mean concentration of a determinant based on a low number of samples may be a poor indicator of the true mean (population) for the site as a whole. A subsequent remediation strategy based on comparison of such a sample mean against SGV may not be sufficiently health protective. Therefore, the Mean Value Test allows a statement to be made with a given level of confidence (usually 95%) that the population mean is less than the SGV and considers the number of samples analysed.

The calculated values of the upper confidence level of the sample group (US95) may be compared with the SGV or GAC, and if it is less, then the Mean Value Test has been passed and the site may be considered as not presenting a significant possibility of harm to human health within the context of Part IIA of the Environment Protection Act. Where a result shows the concentration to be less than the limit of detection adopted for the analysis, the value of the limit of detection has been used in the calculation.

The calculation is based on the following equation:

Where:

$$US^{95} = x + \frac{t \cdot s}{\sqrt{n}}$$

- x is the mean.
- t is a statistical function based on sample size.
- s is standard deviation.
- n is the number of samples.

Using the t-tables included in CLR7, the value of "t" for four samples (n=4) is 2.353 and that for sixteen samples, is 1.753. The results of the statistical analysis are given below. It should be noted that the SGVs given in the table include the SGVs, as cited in CLR8, and also a series of "hybrid" SGVs adopted for the analysis. These have been derived from the upper limit of concentrations for natural (uncontaminated) soils found within the United Kingdom.

The Maximum Value Test is used to determine whether the maximum value of a determinant from a set of analyses is likely to have come from the same population as other concentrations for that determinant, or whether it is a statistical outlier (hot spot).

If the value of "t" is smaller than some critical value, determined from statistical tables and based on the number of samples, the maximum value may be accepted (at the prescribed level of confidence) as a member of the underlying population from which the other results were drawn.

If "t" is greater than the critical value, the maximum value is treated as an outlier. This may indicate a hot spot of contamination requiring additional investigation in order to reveal its extent. The Maximum Value Test uses the relationship:

Where:

$$T = \frac{y_{\max} - Y}{S_y}$$

- $y_{\max}$  is the log of the maximum value of a population.
- Y is the mean value of the logs of the population.
- $S_y$  is the standard deviation from the mean of the logs of the population.

For all hydrocarbon analysis values derived above, the soil organic matter (SOM) has been assumed to be 1%, giving an worst-case scenario, were not otherwise proven by laboratory testing.

## APPENDIX F

In accordance with Environment Agency publication CLR 11 '*Model Procedures for the Management of Land Contamination*', now superseded by LCRA 2022, a quantitative risk assessment for contaminated land has been developed for the Site.

The risk assessment has been carried out using the risk model defined and outlined in the following table. Potential sources have been identified from the desk study information as well as guidance provided in EA publication CLR 8 '*Potential Contaminants for the Assessment of Land*'. Hazard linkages were determined by the ground investigation and the risk re-assessed on the basis of the viability of the linkage. If the hazard linkage is confirmed, then remediation or management solutions will be proposed to ensure that no unacceptable risk remains following development.

|                            | Category               | Definition                                                                                                                                                                     |
|----------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Potential Severity</b>  | <b>Severe</b>          | Acute risks to human health, catastrophic damage to buildings/property, major pollution of controlled waters.                                                                  |
|                            | <b>Medium</b>          | Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures. |
|                            | <b>Mild</b>            | Pollution of non-sensitive waters, minor damage to buildings or structures.                                                                                                    |
|                            | <b>Minor</b>           | Requirement for protective equipment during site works to mitigate health effects, damage to non-sensitive ecosystems or species.                                              |
| <b>Probability of Risk</b> | <b>High Likelihood</b> | Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor.                                              |
|                            | <b>Likely</b>          | Pollutant linkage may be present, and it is probable that the risk will occur over the long term.                                                                              |
|                            | <b>Low Likelihood</b>  | Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so.                                         |
|                            | <b>Unlikely</b>        | Pollutant linkage may be present, but the circumstances under which harm would occur are improbable.                                                                           |

|                            |                        | Potential severity |              |              |              |
|----------------------------|------------------------|--------------------|--------------|--------------|--------------|
|                            |                        | Severe             | Medium       | Mild         | Minor        |
| <b>Probability of Risk</b> | <b>High Likelihood</b> | <b>Very High</b>   | <b>High</b>  | Moderate     | Moderate/Low |
|                            | <b>Likely</b>          | <b>High</b>        | Moderate     | Moderate/Low | Low          |
|                            | <b>Low Likelihood</b>  | Moderate           | Moderate/Low | Low          | Negligible   |
|                            | <b>Unlikely</b>        | Moderate/Low       | Low          | Negligible   | Negligible   |

## APPENDIX G

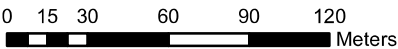
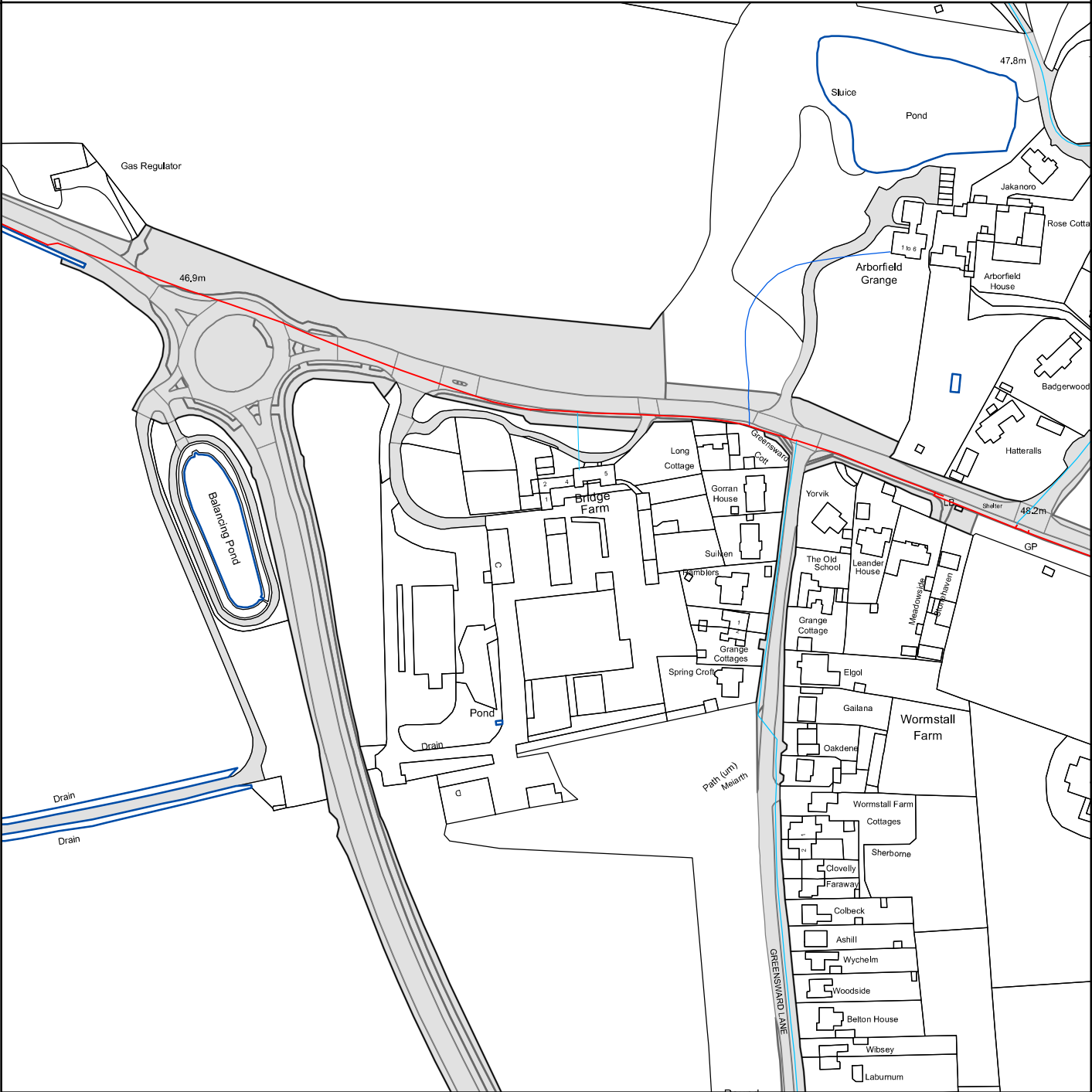
1. This report has been prepared and written specifically for the Client named in the introduction and is exclusively for their benefit. No reliance may be placed in the contents of this report by any third party except with the express agreement of the original Client and the written agreement of PRP. Such written agreement may require the payment of an additional fee.
2. The *Recommendations* section of this report only provides an overview of the guidance and should not be specifically relied upon in their own right but should be considered in relation to the whole report and the development described in this report.
3. This report has been prepared and written in the context of the proposals for the development of the site, as stated by the Client, and will not be valid in a differing context. Furthermore, new information, improved practices, or legislation may necessitate alterations to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of this report, it should be referred to us for re-assessment.
4. The assessment and interpretation of contamination and associated risks are based upon the scope of the work described in the fee proposal and agreed with the Client, the report may not be sufficient to fully address the contamination or allow a detailed remediation scheme to proceed without further investigation or analysis.
5. Any assessments made in this report are based on the ground conditions and as revealed by the test pits and/or boreholes together with the results of any field or laboratory testing undertaken and where appropriate other relevant data which may have been obtained for the site. The sources of such information are detailed in this report and while PRP use only such sources as are believed to be reliable, PRP will not be liable for the authenticity or reliability of information obtained from others.
6. Notwithstanding that factual reports from third-parties concerning asbestos or mould of any kind may have been included for information purposes in this report, PRP will have no liability whatsoever for any claim or claims arising related to asbestos or mould of any kind.
7. There may also be special conditions appertaining to the site which were not revealed by the investigation and which will not, therefore, have been considered in this report. Any assessments may be subject to amendment in the light of additional information becoming available.
8. Whilst an opinion may be expressed or implied in this report on possible configurations of strata between or beyond test pit or borehole locations, or on the possible presence of features based on either visual, verbal or published evidence, this is for guidance only and no liability can be accepted for the accuracy of such opinions.
9. Comments on groundwater conditions will have been based on observations made only at the time of the investigation unless otherwise stated. It should be noted, however, that groundwater levels vary due to seasonal and other effects.
10. This report is not a site categorisation, and hazards could occur which have not been detected.
11. Where data has been provided or is made available to PRP and this has been used in the report, it has been assumed that the information is correct. No responsibility can be accepted by PRP for inaccuracies within the data supplied.
12. The copyright in this report and other related plans and documents prepared by PRP is owned by them and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of the report may however be made and distributed by the Client as an expedient in dealing with matters related to its commission.
13. This report has been prepared solely for the Client's purposes in obtaining planning permission and discharge of the planning conditions related to the proposed development indicated in the report. The discharge of these conditions does not constitute that the site could be determined under Part IIA of the Environmental Protection Act 1990.

## APPENDIX H

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**APPENDIX IV**

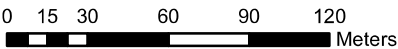
**TW ASSET MAPS**  
**& DEVELOPER ENQUIRY RESPONSE**



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified before any works are undertaken. Crown copyright Reserved

**Scale:** 1:2649  
**Width:** 525m  
**Printed By:** tlove  
**Print Date:** 12/07/2022  
**Map Centre:** 474994,167467  
**Grid Reference:** SU7467SE

**Comments:**



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|                        |               |                  |
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| <b>Scale:</b>          | 1:2649        | <b>Comments:</b> |
| <b>Width:</b>          | 525m          |                  |
| <b>Printed By:</b>     | tlove         |                  |
| <b>Print Date:</b>     | 12/07/2022    |                  |
| <b>Map Centre:</b>     | 474994,167467 |                  |
| <b>Grid Reference:</b> | SU7467SE      |                  |

# ALS/ALS Standard/2022\_4671380

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

| REFERENCE | COVER LEVEL | INVERT LEVEL |
|-----------|-------------|--------------|
| 1301      | 48.6        | 46.46        |
| 1202      | 49.12       | 47.58        |
| 2502      | 47.38       | 45.1         |
| 1504      | 47.5        | 45.4         |
| 1502      | 47.71       | 44.43        |
| 2501      | 47.41       | 44.98        |
| 1201      | 48.94       | 46.92        |
| 261A      |             |              |
| 161C      |             |              |

| REFERENCE | COVER LEVEL | INVERT LEVEL |
|-----------|-------------|--------------|
| 1401      | 47.81       | 45.96        |
| 1505      | 47.29       | 45.43        |
| 2401      |             |              |
| 1402      | 47.84       | 45.06        |
| 1503      | 47.51       | 44.68        |
| 2603      | 47.7        | 45.63        |
| 2701      | 48.03       | 46.14        |
| 151A      |             |              |
| 161D      |             |              |

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Caroline Gower

Mayer Brown Ltd  
Lion House  
147 Oriental Road  
Woking  
Surrey  
GU22 8AR



25 September 2022

## Pre-planning enquiry: Capacity concerns

Dear Caroline,

Thank you for providing information on your development at Greenwards Lane, Arborfield, Berks, RG2 9HT.

Proposed: Construction of 6025m<sup>2</sup> of commercial space on the area of previously greenfield land at the above location and proposed foul water discharge via pump at 5l/s into 150mm diameter foul water public sewer located in Greenwards Lane.

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

### Foul Water

We've assessed your foul water proposals and concluded that our sewerage network does not have sufficient capacity to accommodate foul water flows from the proposed development.

In order to ensure we make the appropriate upgrades – or 'off-site reinforcement' – to serve the remainder of your development, we'll need to carry out modelling work, design a solution and build the necessary improvements. This work is done at our cost.

Once we've begun modelling, we may need to contact you to discuss changing the connection point for capacity reasons. Please note that we'll pay the cost of covering any extra distance if the connection needs to be made at a point further away than the nearest practicable point of at least the same diameter.

### How long could modelling and reinforcement take?

Typical timescales for a development of your size are:

Modelling: 8 months  
Design: 6 months  
Construction: 6 months  
Total: 20 months

If the time you're likely to take from planning and construction through to first occupancy is longer than this, we'll be able to carry out the necessary upgrades in time for your development. If it's shorter, please contact me on the number below to discuss the timing of our activities.

### What do you need to tell us before we start modelling?

We will only carry out modelling once we're confident that your development will proceed. In order to have this confidence, we'll need to know that you **own the land and have either outline or full planning permission**. Please email this information to us as soon as you have it.

If you'd like us to start modelling work ahead of this point, we can do this if you agree to underwrite the cost of modelling and design. That means we'll fund the work – but you agree to pay the cost if you don't achieve first occupancy within five years.

If the modelling shows we need to carry out reinforcement work, then before we start construction we'll need you to supply us with notification that you've confirmed your F10 – Notification of construction project - submission to the Health and Safety Executive.

### Surface Water

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. Before we can consider your surface water needs, you'll need written approval from the lead local flood authority that you have followed the sequential approach to the disposal of surface water and considered all practical means.

The disposal hierarchy being:

- 1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
- 2) rainwater infiltration to ground at or close to source
- 3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
- 4) rainwater discharge direct to a watercourse (unless not appropriate)
- 5) controlled rainwater discharge to a surface water sewer or drain
- 6) controlled rainwater discharge to a combined sewer.

Where connection to the public sewerage network is required to manage surface water flows we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

Please see the attached 'Planning your wastewater' leaflet for additional information.

### What do I need to do next?

If you've satisfied the points above, then you should compare your own timeline with the typical timescales we've suggested for our activities. If the time you're likely to take from planning and construction through to first occupancy is **more** than the total time we're likely to take, we'll be able to carry out the necessary upgrades in time for your development.

If it's **less** than this, you might want to ask us to start modelling earlier – in which case we'll require you to underwrite the cost, as noted above.

If you've any further questions, please contact me on 0800 009 3921.

Yours sincerely

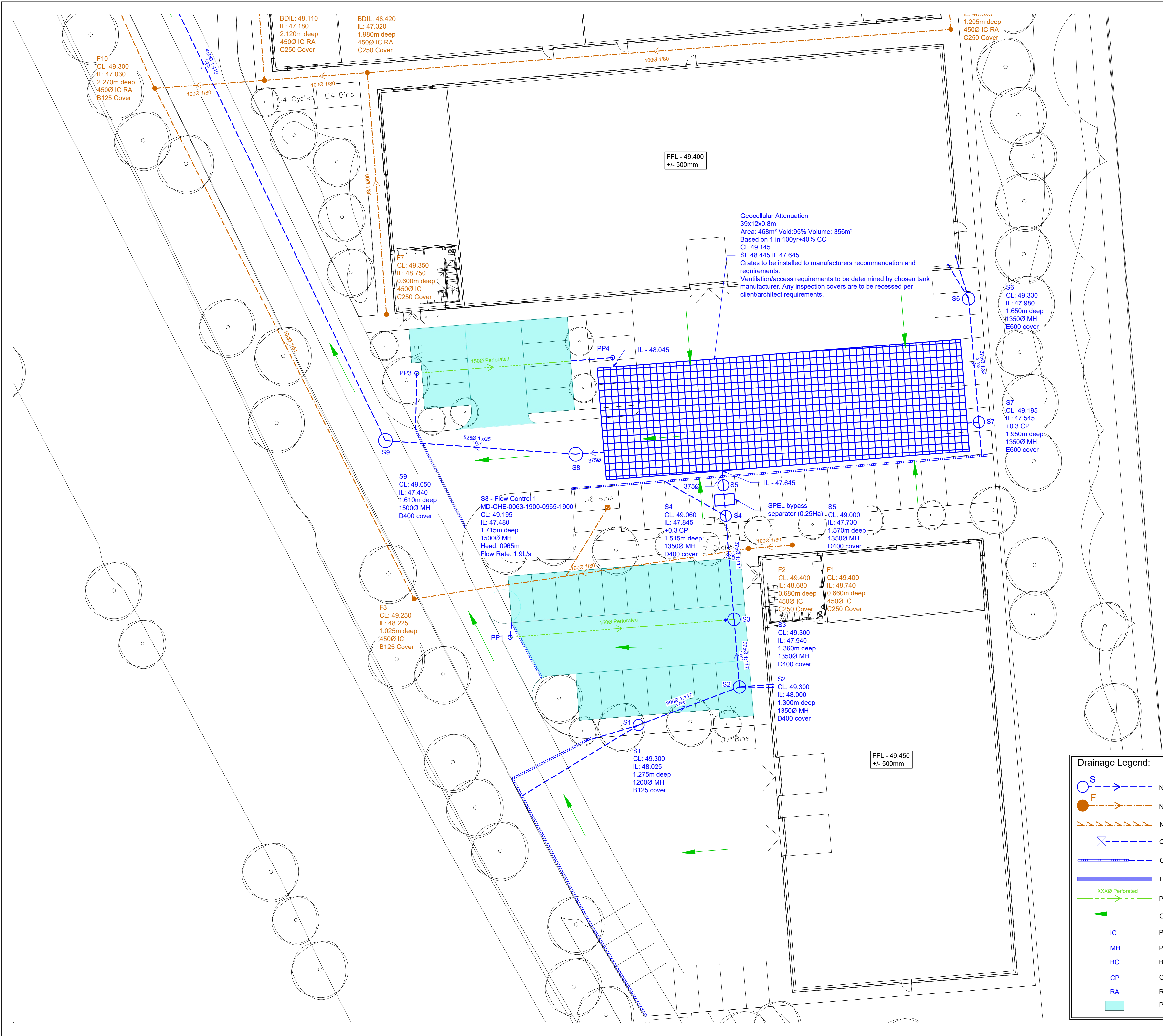
**Maria Merchan**

Adoption Engineer

Developer Services – Adoptions Engineer, Sewer Adoptions Team

**APPENDIX V**

**PROPOSED DRAINAGE LAYOUTS**  
**& SuDS DETAILS**



**Drainage Legend:**

- New Surface Water
- New Foul Water
- New Rising Sewer
- Gully
- Channel Drain
- Filter Drain
- Perforated Pipe
- Overland Flow Route
- Plastic Inspection Chamber
- Pre-Cast Concrete Manhole
- Brick Chamber/Manhole
- Catchpit
- Restricted Access Cover
- Permeable Asphalt Vehicular

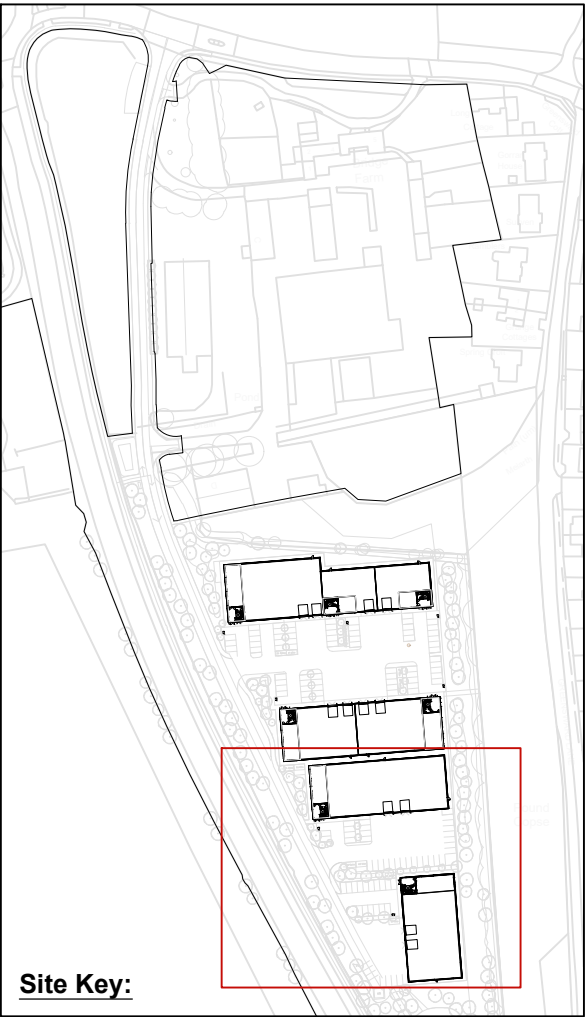
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- DO NOT SCALE FROM THIS DRAWING.
  - All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
  - Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
  - All levels and dimensions are to be checked on site before any work commences.

**Drawing Reference Note:**  
This drawing is based on drawings provided by others:

- Topographical Survey: By Woods Hardwick Drawing reference No: 18959-7-851
- Site Plan: by HTC Architects. ; Drawing reference No: 3389 P403 Rev H

**Note:**  
Rain water pipe positions shown are assumed in position and assumed to be siphonic - final position to be confirmed by specialist.  
Final position, sizing and invert and cover levels of all drainage to be confirmed with external works drawing.  
Ground water issues to be investigated further prior to works commencing on site per ground investigation recommendations - attenuation shown may require mitigation measures with regards to floatation.

**Foul Drainage Note:**  
Final position, sizing and cover and invert levels of all drainage to be confirmed with external works drawing and internal layout drawings.



|     |            |                     |          |
|-----|------------|---------------------|----------|
| P2  | 30/07/2025 | Site layout updated | JD / GF  |
| P1  | 06/06/2025 | Issued for comments | HW / GF  |
| Rev | Date       | Description         | By / Chk |



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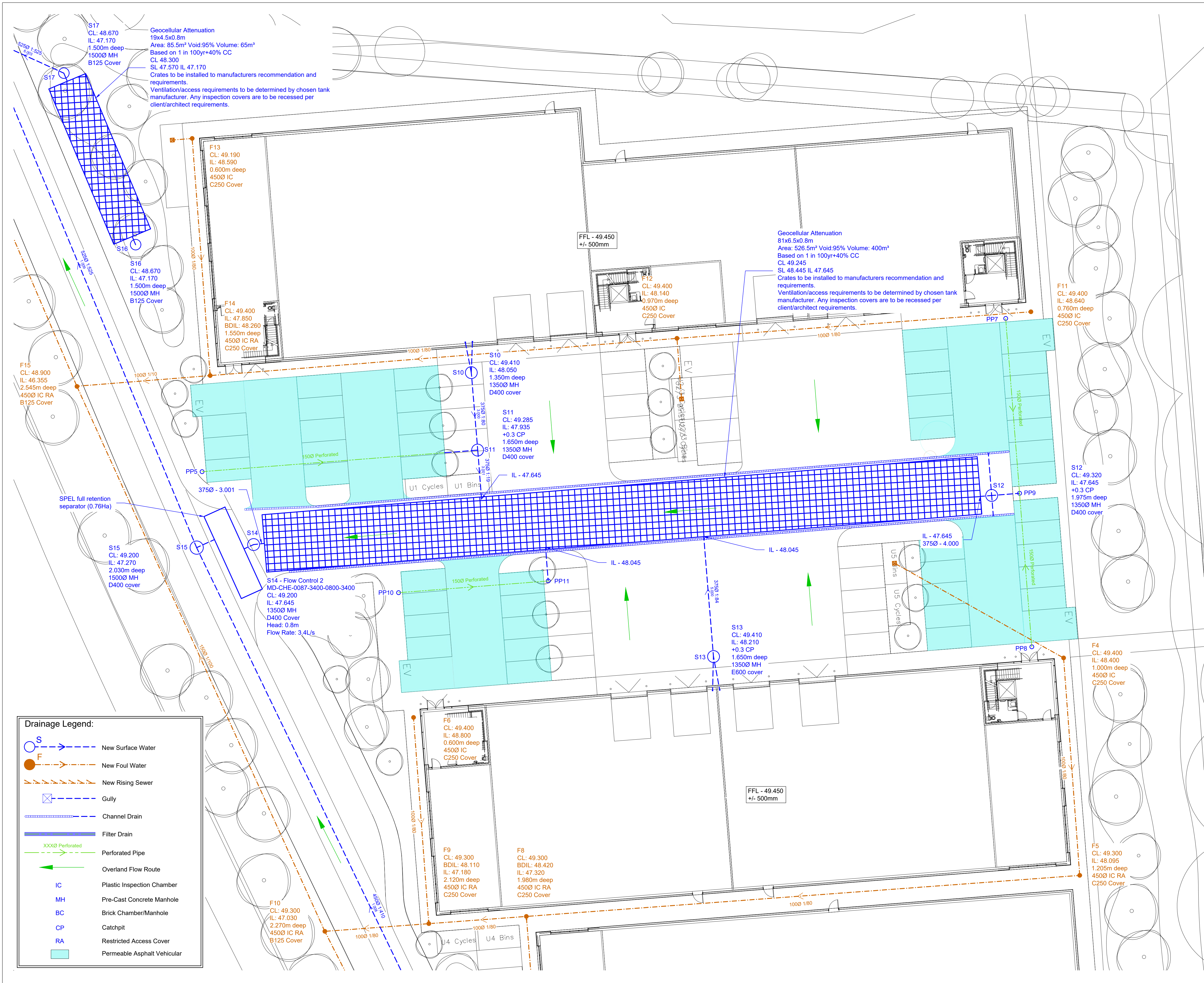
Architect:  
**HTC Architects**

Project:  
**Observer Park, Reading**

Title:  
**Drainage Plan  
Sheet 1**

Status:  
**PRELIMINARY**

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|-------------|-------|--------------|----------|
| Engineer:   | HW    | Date:        | May 2025 |
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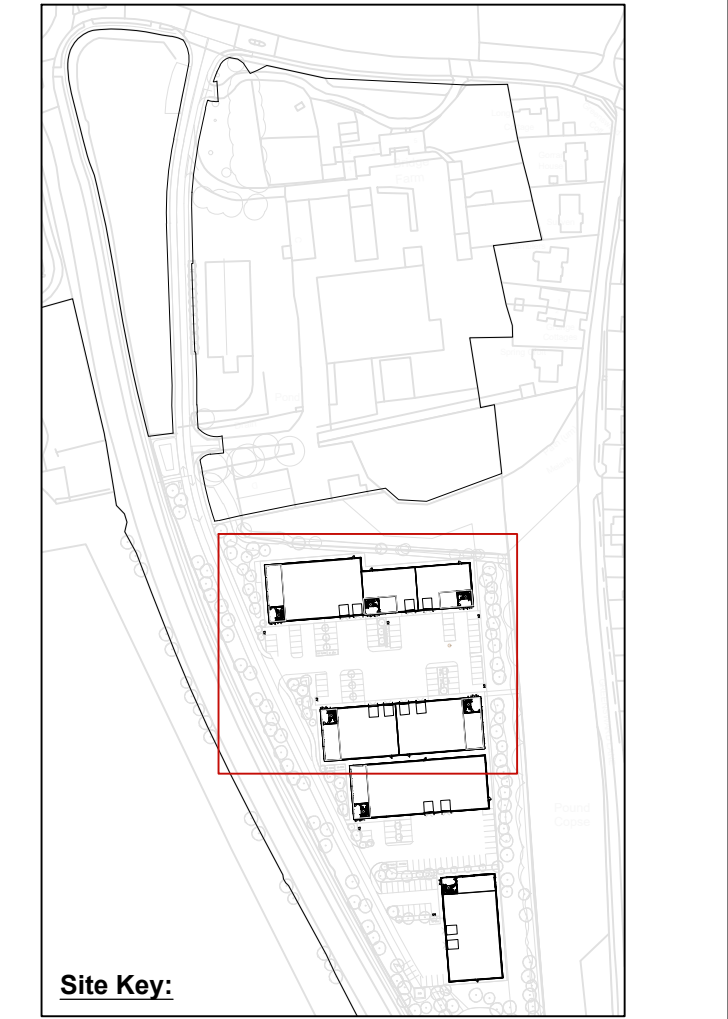


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|-----|------------|---------------------|----------|
| P2  | 30/07/2025 | Site layout updated | JD / GF  |
| P1  | 06/06/2025 | Issued for comments | HW / GF  |
| Rev | Date       | Description         | By / Chk |

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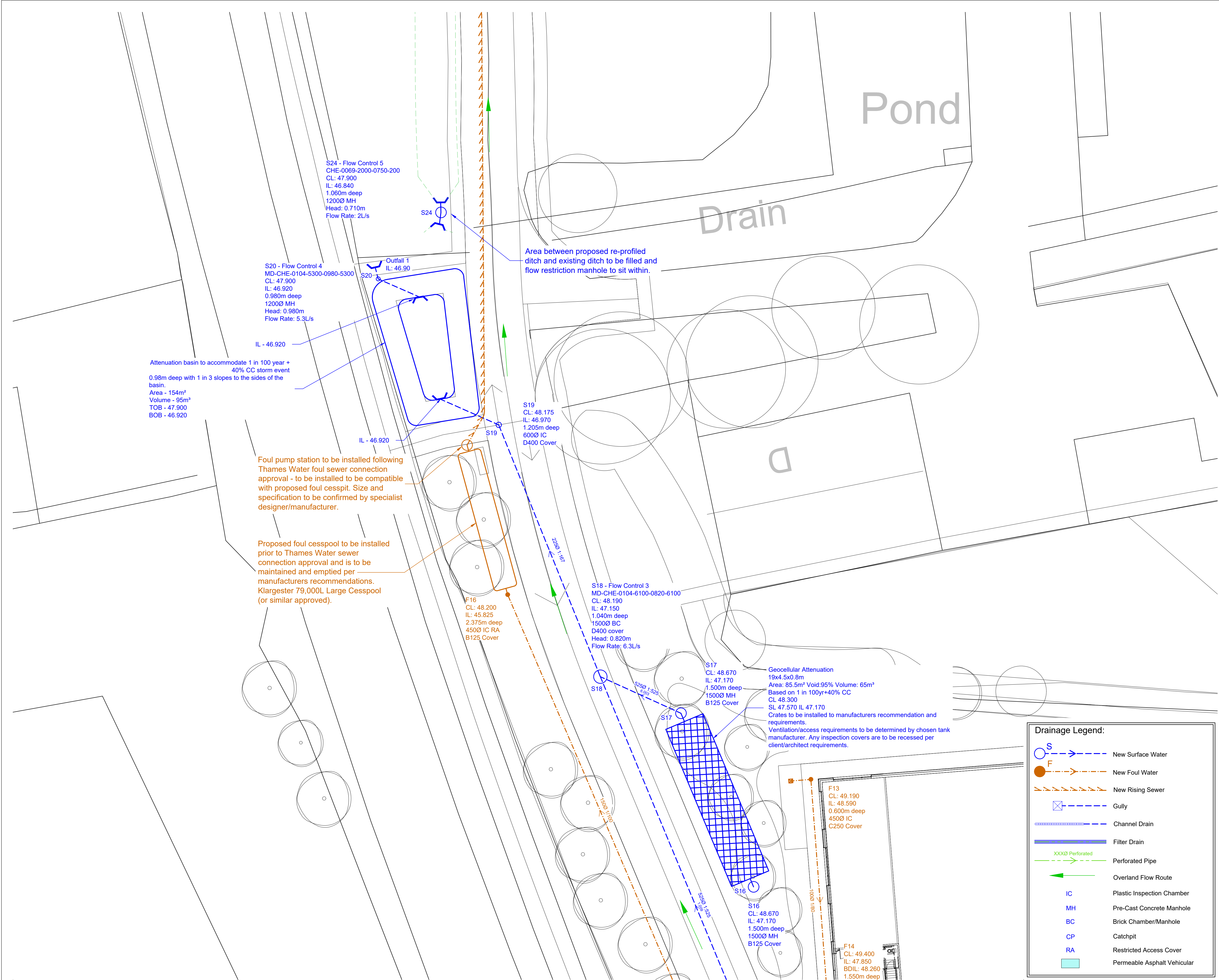
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**Tungsten Dev Co 4 Limited**

Architect:  
**HTC Architects**

Project:  
**Observer Park, Reading**

Title:  
**Drainage Plan  
Sheet 2**

|             |                    |              |          |
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| Engineer:   | HW                 | Date:        | May 2025 |
| Drawn:      | HW                 | Scales @ A1: | 1:200    |
| Checked:    | GF                 |              |          |
| Project No: | 64120              | Drg No:      | 002      |
|             |                    | Rev:         | P2       |



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- This drawing is based on drawings provided by others:
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**Note:**

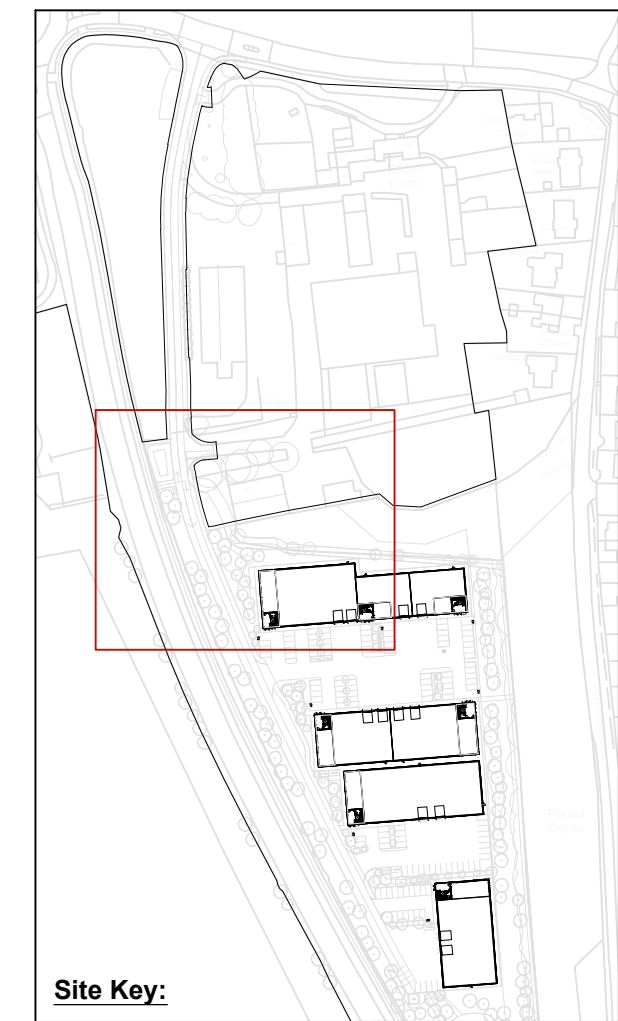
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Site Key:

|     |            |                     |          |
|-----|------------|---------------------|----------|
| P2  | 30/07/2025 | Site layout updated | JD / GF  |
| P1  | 06/06/2025 | Issued for comments | HW / GF  |
| Rev | Date       | Description         | By / Chk |

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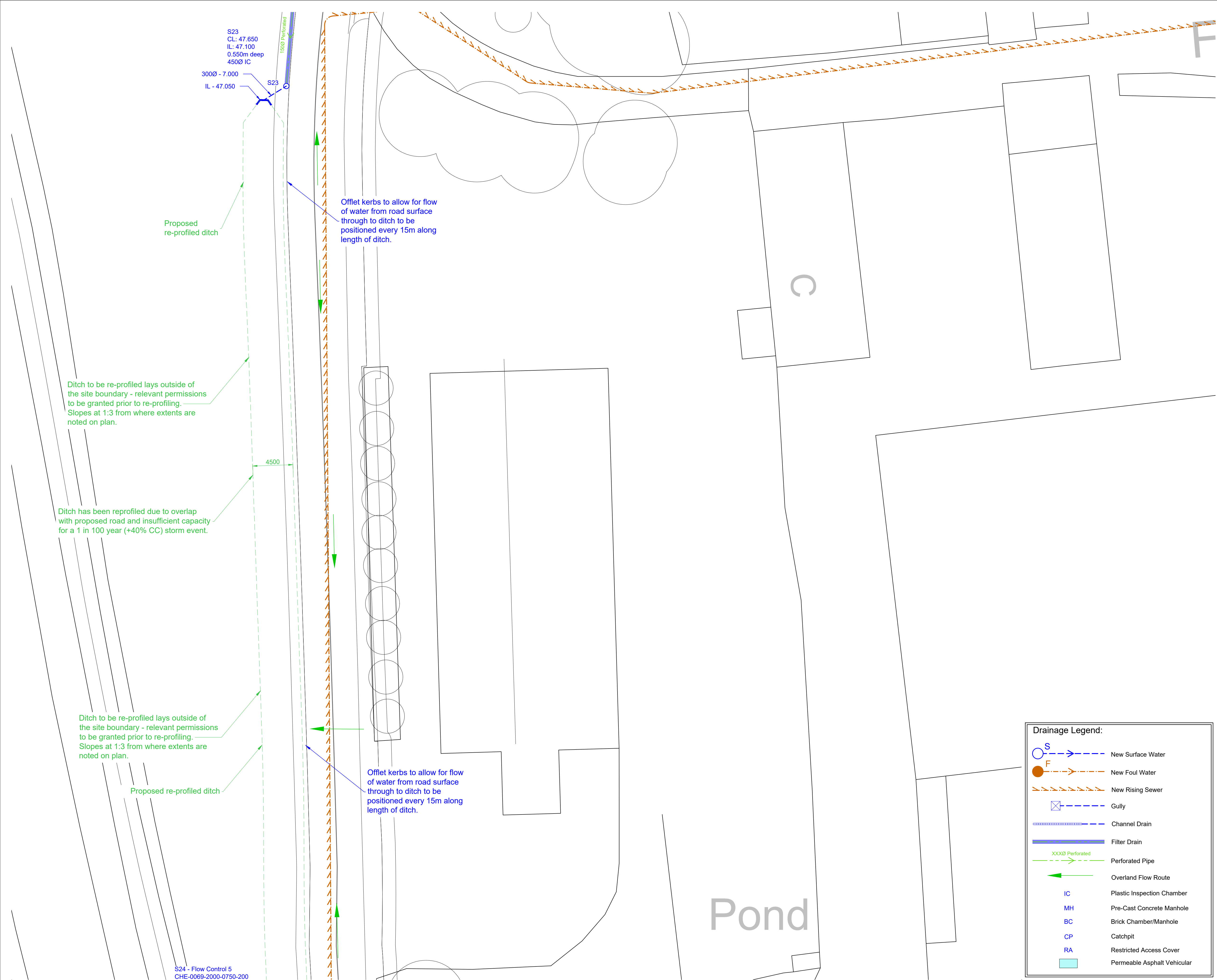
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|             |                           |              |          |
|-------------|---------------------------|--------------|----------|
| Client:     | Tungsten Dev Co 4 Limited |              |          |
| Architect:  | HTC Architects            |              |          |
| Project:    | Observer Park, Reading    |              |          |
| Title:      | Drainage Plan<br>Sheet 3  |              |          |
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| Engineer:   | HW                        | Date:        | May 2025 |
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| Checked:    | GF                        |              |          |
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**Note:**

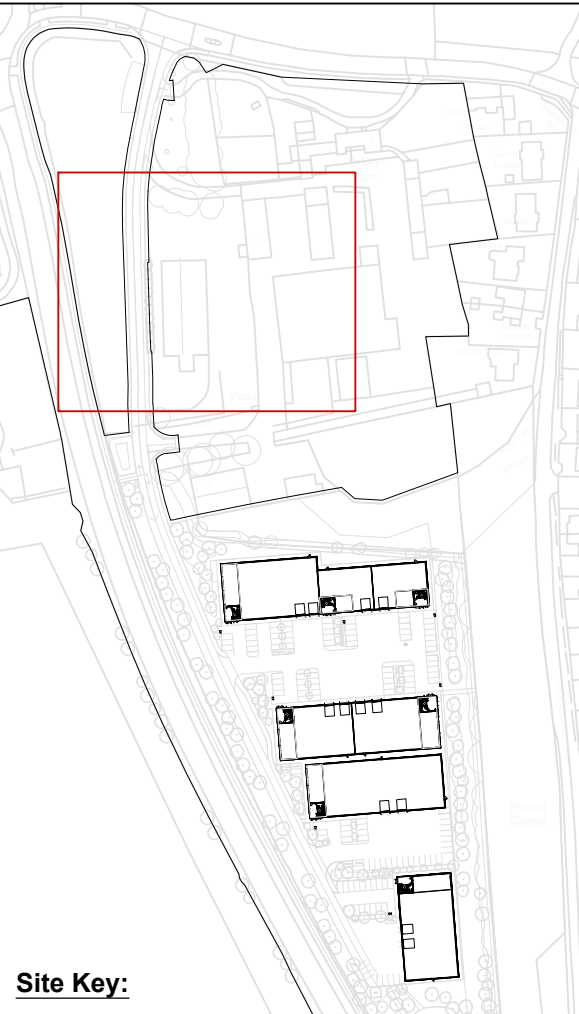
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|-----|------------|---------------------|----------|
| P2  | 30/07/2025 | Site layout updated | JD / GF  |
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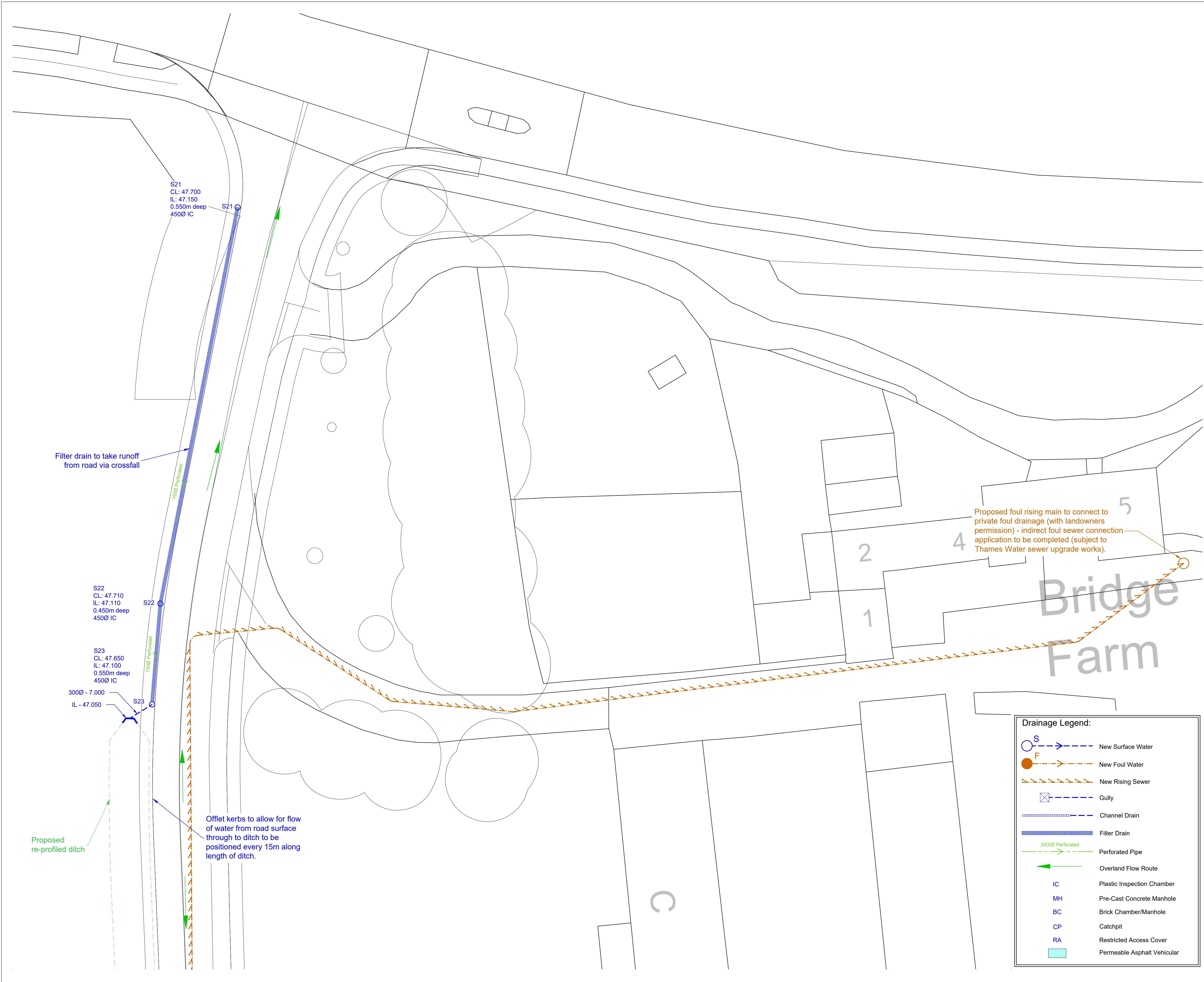
Architect:  
HTC Architects

Project:  
Observer Park, Reading

Title:  
Drainage Plan  
Sheet 3

Status:  
**PRELIMINARY**

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|-------------|-------|--------------|----------|
| Engineer:   | HW    | Date:        | May 2025 |
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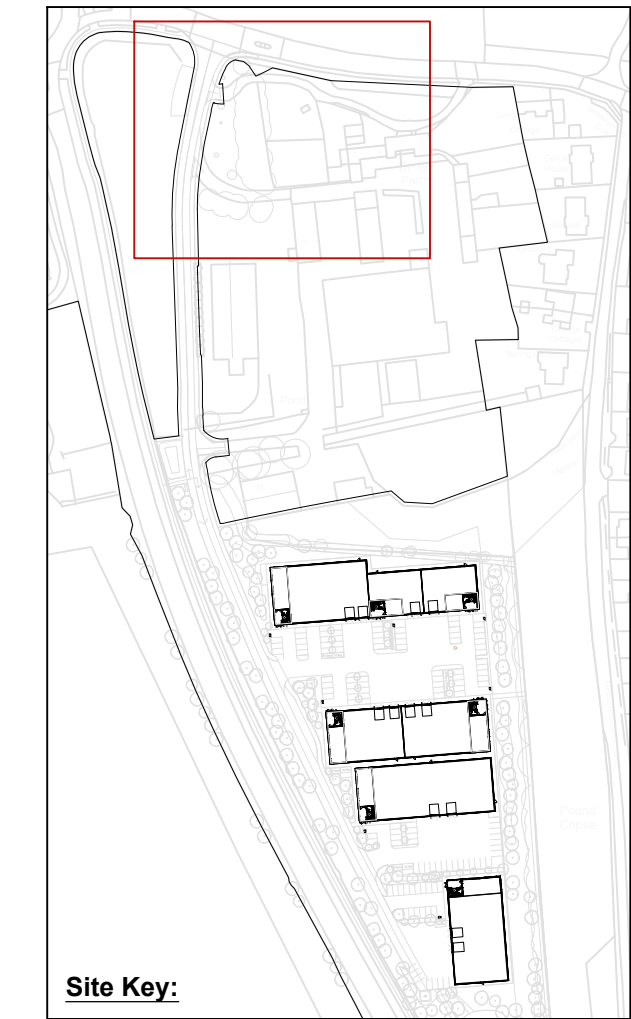
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|-----|------------|---------------------|----------|
| P2  | 30/07/2025 | Site layout updated | JD / GF  |
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Client:  
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Architect:  
HTC Architects

Project:  
Observer Park, Reading

Title:  
Drainage Plan  
Sheet 4

Status:  
**PRELIMINARY**

|             |       |              |          |
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| Checked:    | GF    | 1:200        |          |
| Project No: | 64120 | Drg No:      | 005      |
|             |       | Rev:         | P2       |



**APPENDIX VI**

**PROPOSED DRAINAGE NETWORK  
& GREENFIELD RUNOFF CALCULATIONS**

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |

| Name                         | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)            | Connection Details   |                 |                       |                      | Type           |
|------------------------------|-------------------------------------|-----------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m)              | Depth (m)                           |                             | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                              |                                     |                             | Outgoing Connections |                 |                       |                      | Cover          |
| S20                          | 47.900<br>46.920                    | Diameter /<br>Length: 1.200 | {1} 1.012            | Pipe            | 46.920                | Diam/Width:225       | Manhole        |
| E:474906.729<br>N:167368.985 | 0.980                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 1.013            | Pipe            | 46.920                | Diam/Width:150       | Not Applicable |
| S19                          | 48.175<br>46.970                    | Diameter /<br>Length: 1.200 | {1} 1.010            | Pipe            | 46.970                | Diam/Width:225       | Manhole        |
| E:474920.290<br>N:167352.230 | 1.205                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 1.011            | Pipe            | 46.970                | Diam/Width:225       | Not Applicable |
| S18                          | 48.190<br>47.150                    | Diameter /<br>Length: 1.500 | {1} 1.009            | Pipe            | 47.150                | Diam/Width:525       | Manhole        |
| E:474931.630<br>N:167324.138 | 1.040                               |                             | {2} 6.000            | Pipe            | 47.150                | Diam/Width:525       |                |
|                              |                                     |                             | {a} 1.010            | Pipe            | 47.150                | Diam/Width:225       | Not Applicable |
| S17                          | 48.670<br>47.170                    | Diameter /<br>Length: 1.500 | {1} 6.001            | Pipe            | 47.170                | Diam/Width:525       | Manhole        |
| E:474940.621<br>N:167320.056 | 1.500                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 6.000            | Pipe            | 47.170                | Diam/Width:525       | Not Applicable |
| S16                          | 48.670<br>47.170                    | Diameter /<br>Length: 1.500 |                      |                 |                       |                      | Manhole        |
| E:474948.725<br>N:167300.682 | 1.500                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 6.002            | Pipe            | 47.170                | Diam/Width:525       | Not Applicable |

|                                                                    |  |                                                                          |                   |                                                                                     |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |                    |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     | Approved By:<br>HP |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |                    |

| Name                         | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)         | Connection Details   |                 |                       |                      | Type           |
|------------------------------|-------------------------------------|--------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m)              | Depth (m)                           |                          | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                              |                                     |                          | Outgoing Connections |                 |                       |                      | Cover          |
| S15                          | 49.200<br>47.270                    | Diameter / Length: 1.500 | {1} 1.008            | Pipe            | 47.270                | Diam/Width:525       | Manhole        |
| E:474955.613<br>N:167266.473 | 1.930                               |                          | {2} 3.002 (1)        | Pipe            | 47.420                | Diam/Width:375       |                |
|                              |                                     |                          | {a} 1.009            | Pipe            | 47.270                | Diam/Width:525       | Not Applicable |
| S14                          | 49.200<br>47.645                    | Diameter / Length: 1.350 | {1} 3.002            | Pipe            | 47.645                | Diam/Width:375       | Manhole        |
| E:474962.040<br>N:167266.821 | 1.555                               |                          |                      |                 |                       |                      |                |
|                              |                                     |                          | {a} 3.002 (1)        | Pipe            | 47.645                | Diam/Width:375       | Not Applicable |
| S10                          | 49.410<br>48.050                    | Diameter / Length: 1.350 |                      |                 |                       |                      | Manhole        |
| E:474986.623<br>N:167286.235 | 1.360                               |                          |                      |                 |                       |                      |                |
|                              |                                     |                          | {a} 3.000            | Pipe            | 48.050                | Diam/Width:375       | Not Applicable |
| S11                          | 49.300<br>47.935                    | Diameter / Length: 1.350 | {1} 3.000            | Pipe            | 47.935                | Diam/Width:375       | Manhole        |
| E:474987.350<br>N:167277.487 | 1.365                               |                          | {2} PPO1             | Pipe            | 47.935                | Diam/Width:150       |                |
|                              |                                     |                          | {a} 3.001            | Pipe            | 47.935                | Diam/Width:375       | Not Applicable |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



| Name            | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)            | Connection Details   |                 |                       |                      | Type           |
|-----------------|-------------------------------------|-----------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m) | Depth (m)                           |                             | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                 |                                     |                             | Outgoing Connections |                 |                       |                      | Cover          |
| S12             | 49.320<br>47.645                    | Diameter /<br>Length: 1.350 | {1} 4.000            | Pipe            | 47.645                | Diam/Width:225       | Manhole        |
| E:475045.612    | 1.675                               |                             |                      |                 |                       |                      |                |
| N:167272.372    |                                     |                             | {a} 4.001            | Pipe            | 47.645                | Diam/Width:375       | Not Applicable |
| PP9             | 49.445<br>48.445                    | Diameter /<br>Length: 0.450 | {1} PPO2             | Pipe            | 48.445                | Diam/Width:150       | Manhole        |
| E:475048.519    | 1.000                               |                             | {2} PPO4             | Pipe            | 48.445                | Diam/Width:150       |                |
| N:167272.613    |                                     |                             | {a} 4.000            | Pipe            | 48.445                | Diam/Width:225       | Not Applicable |
| S13             | 49.410<br>48.210                    | Diameter /<br>Length: 1.350 |                      |                 |                       |                      | Manhole        |
| E:475013.959    | 1.200                               |                             |                      |                 |                       |                      |                |
| N:167254.197    |                                     |                             | {a} 5.000            | Pipe            | 48.210                | Diam/Width:375       | Not Applicable |
| S9              | 49.050<br>47.440                    | Diameter /<br>Length: 1.500 | {1} 1.007            | Pipe            | 47.440                | Diam/Width:525       | Manhole        |
| E:474994.776    | 1.610                               |                             |                      |                 |                       |                      |                |
| N:167185.441    |                                     |                             | {a} 1.008            | Pipe            | 47.440                | Diam/Width:525       | Not Applicable |
| S8              | 49.195<br>47.480                    | Diameter /<br>Length: 1.500 | {1} 1.006            | Pipe            | 47.630                | Diam/Width:375       | Manhole        |
| E:475015.155    | 1.715                               |                             |                      |                 |                       |                      |                |
| N:167183.988    |                                     |                             | {a} 1.007            | Pipe            | 47.480                | Diam/Width:525       | Not Applicable |

|                                                                    |  |                                                                          |                   |                                                                                     |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |                    |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     | Approved By:<br>HP |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |                    |

| Name                         | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)         | Connection Details   |                 |                       |                      | Type           |
|------------------------------|-------------------------------------|--------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m)              | Depth (m)                           |                          | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                              |                                     |                          | Outgoing Connections |                 |                       |                      | Cover          |
| S7                           | 49.195<br>47.645                    | Diameter / Length: 1.350 | {1} 2.000            | Pipe            | 47.645                | Diam/Width:375       | Manhole        |
| E:475058.325<br>N:167187.423 | 1.550                               |                          | {a} 2.001            | Pipe            | 47.645                | Diam/Width:375       | Not Applicable |
| S6                           | 49.330<br>47.980                    | Diameter / Length: 1.350 |                      |                 |                       |                      | Manhole        |
| E:475057.223<br>N:167200.628 | 1.350                               |                          | {a} 2.000            | Pipe            | 47.980                | Diam/Width:375       | Not Applicable |
| S4                           | 49.060<br>47.845                    | Diameter / Length: 1.350 | {1} 1.003            | Pipe            | 47.845                | Diam/Width:375       | Manhole        |
| E:475031.280<br>N:167177.386 | 1.215                               |                          | {a} 1.004            | Pipe            | 47.845                | Diam/Width:375       | Not Applicable |
| S3                           | 49.400<br>47.940                    | Diameter / Length: 1.350 | {1} 1.001            | Pipe            | 47.940                | Diam/Width:375       | Manhole        |
| E:475032.093<br>N:167166.318 | 1.460                               |                          | {2} PPO6             | Pipe            | 47.940                | Diam/Width:150       |                |
|                              |                                     |                          | {a} 1.003            | Pipe            | 47.940                | Diam/Width:375       | Not Applicable |
| S2                           | 49.400<br>48.000                    | Diameter / Length: 1.350 | {1} 1.000            | Pipe            | 48.000                | Diam/Width:300       | Manhole        |
| E:475032.676<br>N:167159.075 | 1.400                               |                          | {a} 1.001            | Pipe            | 48.000                | Diam/Width:375       | Not Applicable |

|                                                                    |  |                                                                          |                   |                                                                                     |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |                    |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     | Approved By:<br>HP |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |                    |

| Name                | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)         | Connection Details   |                 |                       |                      | Type           |
|---------------------|-------------------------------------|--------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m)     | Depth (m)                           |                          | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                     |                                     |                          | Outgoing Connections |                 |                       |                      | Cover          |
| S1                  | 49.300<br>48.025                    | Diameter / Length: 1.200 |                      |                 |                       |                      | Manhole        |
| E:475021.872        | 1.275                               |                          |                      |                 |                       |                      |                |
| N:167154.994        |                                     |                          | {a} 1.000            | Pipe            | 48.025                | Diam/Width:300       | Not Applicable |
| Watercourse Outfall | 47.900<br>46.880                    | Diameter / Length: 1.200 | {1} 1.013            | Pipe            | 46.880                | Diam/Width:150       | Manhole        |
| E:474905.976        | 1.020                               |                          |                      |                 |                       |                      |                |
| N:167371.609        |                                     |                          |                      |                 |                       |                      | Not Applicable |
| S5                  | 49.000<br>47.730                    | Diameter / Length: 1.200 | {1} 1.004            | Pipe            | 47.730                | Diam/Width:375       | Manhole        |
| E:475031.012        | 1.270                               |                          |                      |                 |                       |                      |                |
| N:167180.671        |                                     |                          | {a} 1.005            | Pipe            | 47.730                | Diam/Width:375       | Not Applicable |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflow Summary<br>Storm Phase: Phase      |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



| Inflow Label       | Connected To | Flow (L/s) | Runoff Method         | Area (ha)    | Percentage Impervious (%) | Urban Creep (%) | Adjusted Percentage Impervious (%) | Area Analysed (ha) |
|--------------------|--------------|------------|-----------------------|--------------|---------------------------|-----------------|------------------------------------|--------------------|
| Access Road 1      | S18          |            | Time of Concentration | 0.072        | 100                       | 0               | 100                                | 0.072              |
| Access Road 2      | S9           |            | Time of Concentration | 0.030        | 100                       | 0               | 100                                | 0.030              |
| Catchment Area     | S12          |            | Time of Concentration | 0.029        | 100                       | 0               | 100                                | 0.029              |
| Lower Road 2       | S15          |            | Time of Concentration | 0.086        | 100                       | 0               | 100                                | 0.086              |
| PP1                | PP1          |            | Time of Concentration | 0.036        | 100                       | 0               | 100                                | 0.036              |
| PP2                | PP2          |            | Time of Concentration | 0.025        | 100                       | 0               | 100                                | 0.025              |
| PP3                | PP3          |            | Time of Concentration | 0.022        | 100                       | 0               | 100                                | 0.022              |
| PP4                | PP4          |            | Time of Concentration | 0.023        | 100                       | 0               | 100                                | 0.023              |
| PP5                | PP5          |            | Time of Concentration | 0.017        | 100                       | 0               | 100                                | 0.017              |
| PP6                | PP6          |            | Time of Concentration | 0.036        | 100                       | 0               | 100                                | 0.036              |
| U1-5 Shared Road 1 | S12          |            | Time of Concentration | 0.034        | 100                       | 0               | 100                                | 0.034              |
| Unit 1 Yard        | S10          |            | Time of Concentration | 0.035        | 100                       | 0               | 100                                | 0.035              |
| Unit 1/2/3         | S10          |            | Time of Concentration | 0.249        | 100                       | 0               | 100                                | 0.249              |
| Unit 2/3 Yard      | S12          |            | Time of Concentration | 0.041        | 100                       | 0               | 100                                | 0.041              |
| Unit 4 Yard        | S13          |            | Time of Concentration | 0.029        | 100                       | 0               | 100                                | 0.029              |
| Unit 4/5           | S13          |            | Time of Concentration | 0.205        | 100                       | 0               | 100                                | 0.205              |
| Unit 5 Yard        | S12          |            | Time of Concentration | 0.030        | 100                       | 0               | 100                                | 0.030              |
| Unit 6             | S6           |            | Time of Concentration | 0.172        | 100                       | 0               | 100                                | 0.172              |
| Unit 6 Entrance    | S8           |            | Time of Concentration | 0.011        | 100                       | 0               | 100                                | 0.011              |
| Unit 6 Yard        | S7           |            | Time of Concentration | 0.107        | 100                       | 0               | 100                                | 0.107              |
| Unit 7             | S2           |            | Time of Concentration | 0.133        | 100                       | 0               | 100                                | 0.133              |
| Unit 7 Yard        | S1           |            | Time of Concentration | 0.068        | 100                       | 0               | 100                                | 0.068              |
| <b>TOTAL</b>       |              | <b>0.0</b> |                       | <b>1.492</b> |                           |                 |                                    | <b>1.492</b>       |

|                                                                        |                                                                          |                   |                    |
|------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1     | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                        | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Network Design Criteria<br>Storm Phase: Phase | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



### Flow Options

|                           |                               |
|---------------------------|-------------------------------|
| Peak Flow Calculation     | (UK) Modified Rational Method |
| Min. Time of Entry (mins) | 5                             |
| Max. Travel Time (mins)   | 30                            |

### Pipe Options

|                       |                          |
|-----------------------|--------------------------|
| Lock Slope Options    | None                     |
| Design Options        | Minimise Excavation      |
| Design Level          | Level Soffits            |
| Min. Cover Depth (m)  | 1.200                    |
| Min. Slope (1:X)      | 500.00                   |
| Max. Slope (1:X)      | 40.00                    |
| Min. Velocity (m/s)   | 1.0                      |
| Max. Velocity (m/s)   | 3.0                      |
| Use Flow Restriction  | <input type="checkbox"/> |
| Reduce Channel Depths | <input type="checkbox"/> |

### Manhole Options

|              |                          |
|--------------|--------------------------|
| Apply Offset | <input type="checkbox"/> |
|--------------|--------------------------|

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Outfall Details<br>Storm Phase: Phase     | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



Outfalls

| Outfall             | Outfall Type   | Gated | Fixed Surcharged<br>Level (m) | Level Curve |
|---------------------|----------------|-------|-------------------------------|-------------|
| Watercourse Outfall | Free Discharge |       |                               |             |

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Title:<br><br>Rainfall Analysis Criteria                    | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                                 |                          |
|---------------------------------|--------------------------|
| Runoff Type                     | Dynamic                  |
| Output Interval (mins)          | 5                        |
| Time Step                       | Default                  |
| Urban Creep                     | Apply Global Value       |
| Urban Creep Global Value (%)    | 0                        |
| Junction Flood Risk Margin (mm) | 300                      |
| Perform No Discharge Analysis   | <input type="checkbox"/> |

## Rainfall

FSR

Type: FSR

|            |                                     |
|------------|-------------------------------------|
| Region     | England And Wales                   |
| M5-60 (mm) | 18.3                                |
| Ratio R    | 0.400                               |
| Summer     | <input checked="" type="checkbox"/> |
| Winter     | <input checked="" type="checkbox"/> |

## Return Period

| Return Period (years) | Increase Rainfall (%) |
|-----------------------|-----------------------|
| 1.0                   | 0.000                 |
| 10.0                  | 0.000                 |
| 30.0                  | 0.000                 |
| 100.0                 | 0.000                 |
| 100.0                 | 40.000                |

## Storm Durations

| Duration (mins) | Run Time (mins) |
|-----------------|-----------------|
| 15              | 30              |
| 30              | 60              |
| 60              | 120             |
| 120             | 240             |
| 180             | 360             |
| 240             | 480             |
| 360             | 720             |
| 480             | 960             |
| 600             | 1200            |
| 720             | 1440            |
| 960             | 1920            |
| 1440            | 2880            |
| 2160            | 4320            |
| 2880            | 5760            |
| 4320            | 8640            |
| 5760            | 11520           |
| 7200            | 14400           |
| 8640            | 17280           |
| 10080           | 20160           |

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Title:<br><br>UK and Ireland Rural Runoff Calculator        | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



## ICP SUDS / IH 124

### Details

|                       |          |
|-----------------------|----------|
| Method                | ICP SUDS |
| Area (ha)             | 1.67     |
| SAAR (mm)             | 700.0    |
| Soil                  | 0.45     |
| Region                | Region 6 |
| Urban                 | 0        |
| Return Period (years) | 100      |

### Results

| Region   | QBAR Rural<br>(L/s) | QBAR Urban<br>(L/s) | Q 100 (years)<br>(L/s) | Q 1 (years)<br>(L/s) | Q 30 (years)<br>(L/s) | Q 100 (years)<br>(L/s) |
|----------|---------------------|---------------------|------------------------|----------------------|-----------------------|------------------------|
| Region 6 | 7.3                 | 7.3                 | 23.4                   | 6.2                  | 16.6                  | 23.4                   |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                            | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|----------------------------------------|------------------|-------------------|--------------------------|
| Unit 1/2/3         | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.25             | 31.9              | 14.751                   |
| PP1                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 4.6               | 2.141                    |
| PP2                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02             | 3.2               | 1.472                    |
| Unit 1 Yard        | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.5               | 2.069                    |
| Unit 2/3 Yard      | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 5.3               | 2.438                    |
| PP3                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02             | 2.9               | 1.319                    |
| PP4                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02             | 3.0               | 1.391                    |
| Unit 4 Yard        | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.8               | 1.745                    |
| Unit 5 Yard        | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.9               | 1.784                    |
| U1-5 Shared Road 1 | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 4.4               | 2.039                    |
| Catchment Area     | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.03             | 3.7               | 1.718                    |
| Unit 4/5           | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.21             | 26.4              | 12.187                   |
| Unit 6             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.17             | 22.1              | 10.196                   |
| PP5                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.02             | 2.1               | 0.981                    |
| Unit 6 Yard        | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.11             | 13.8              | 6.369                    |
| Unit 6 Entrance    | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.01             | 1.4               | 0.669                    |
| PP6                | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.04             | 4.7               | 2.159                    |
| Unit 7             | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.13             | 17.1              | 7.914                    |
| Unit 7 Yard        | FSR: 1 years:<br>+0 %: 15 mins: Winter | 0.07             | 8.7               | 4.012                    |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



|               |                                           |      |      |       |
|---------------|-------------------------------------------|------|------|-------|
| Access Road 2 | FSR: 1 years:<br>+0 %: 15<br>mins: Winter | 0.03 | 3.9  | 1.781 |
| Lower Road 2  | FSR: 1 years:<br>+0 %: 15<br>mins: Winter | 0.09 | 11.0 | 5.083 |
| Access Road 1 | FSR: 1 years:<br>+0 %: 15<br>mins: Winter | 0.07 | 9.3  | 4.270 |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                                | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|--------------------------------------------|------------------|-------------------|--------------------------|
| Unit 1/2/3         | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.25             | 61.9              | 28.567                   |
| PP1                | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.04             | 9.0               | 4.145                    |
| PP2                | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 6.2               | 2.846                    |
| Unit 1 Yard        | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 8.7               | 3.998                    |
| Unit 2/3 Yard      | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.04             | 10.2              | 4.727                    |
| PP3                | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 5.5               | 2.555                    |
| PP4                | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 5.8               | 2.696                    |
| Unit 4 Yard        | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 7.3               | 3.377                    |
| Unit 5 Yard        | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 7.5               | 3.461                    |
| U1-5 Shared Road 1 | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 8.5               | 3.944                    |
| Catchment Area     | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 7.2               | 3.338                    |
| Unit 4/5           | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.21             | 51.1              | 23.603                   |
| Unit 6             | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.17             | 42.7              | 19.743                   |
| PP5                | FSR: 10 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 4.1               | 1.904                    |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



|                    |                                               |      |      |        |
|--------------------|-----------------------------------------------|------|------|--------|
| Unit 6 Yard        | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.11 | 26.7 | 12.327 |
| Unit 6<br>Entrance | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.01 | 2.8  | 1.302  |
| PP6                | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.04 | 9.0  | 4.178  |
| Unit 7             | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.13 | 33.2 | 15.326 |
| Unit 7 Yard        | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 16.8 | 7.777  |
| Access<br>Road 2   | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.03 | 7.5  | 3.446  |
| Lower<br>Road 2    | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.09 | 21.3 | 9.840  |
| Access<br>Road 1   | FSR: 10<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 17.9 | 8.275  |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                                | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|--------------------------------------------|------------------|-------------------|--------------------------|
| Unit 1/2/3         | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.25             | 78.2              | 36.129                   |
| PP1                | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.04             | 11.3              | 5.243                    |
| PP2                | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 7.8               | 3.602                    |
| Unit 1 Yard        | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 10.9              | 5.057                    |
| Unit 2/3 Yard      | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.04             | 12.9              | 5.978                    |
| PP3                | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 7.0               | 3.233                    |
| PP4                | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 7.4               | 3.410                    |
| Unit 4 Yard        | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 9.2               | 4.268                    |
| Unit 5 Yard        | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 9.5               | 4.373                    |
| U1-5 Shared Road 1 | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 10.8              | 4.988                    |
| Catchment Area     | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.03             | 9.1               | 4.217                    |
| Unit 4/5           | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.21             | 64.6              | 29.855                   |
| Unit 6             | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.17             | 54.1              | 24.972                   |
| PP5                | FSR: 30 years: +0 %:<br>15 mins:<br>Winter | 0.02             | 5.2               | 2.405                    |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



|                    |                                               |      |      |        |
|--------------------|-----------------------------------------------|------|------|--------|
| Unit 6 Yard        | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.11 | 33.8 | 15.596 |
| Unit 6<br>Entrance | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.01 | 3.6  | 1.644  |
| PP6                | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.04 | 11.4 | 5.282  |
| Unit 7             | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.13 | 42.0 | 19.384 |
| Unit 7 Yard        | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 21.3 | 9.835  |
| Access<br>Road 2   | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.03 | 9.4  | 4.364  |
| Lower<br>Road 2    | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.09 | 27.0 | 12.447 |
| Access<br>Road 1   | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 22.7 | 10.468 |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                           | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|---------------------------------------|------------------|-------------------|--------------------------|
| Unit 1/2/3         | FSR: 100 years: +0 %: 15 mins: Winter | 0.25             | 101.2             | 46.736                   |
| PP1                | FSR: 100 years: +0 %: 15 mins: Winter | 0.04             | 14.7              | 6.785                    |
| PP2                | FSR: 100 years: +0 %: 15 mins: Winter | 0.02             | 10.1              | 4.661                    |
| Unit 1 Yard        | FSR: 100 years: +0 %: 15 mins: Winter | 0.03             | 14.2              | 6.545                    |
| Unit 2/3 Yard      | FSR: 100 years: +0 %: 15 mins: Winter | 0.04             | 16.7              | 7.729                    |
| PP3                | FSR: 100 years: +0 %: 15 mins: Winter | 0.02             | 9.1               | 4.181                    |
| PP4                | FSR: 100 years: +0 %: 15 mins: Winter | 0.02             | 9.6               | 4.409                    |
| Unit 4 Yard        | FSR: 100 years: +0 %: 15 mins: Winter | 0.03             | 12.0              | 5.522                    |
| Unit 5 Yard        | FSR: 100 years: +0 %: 15 mins: Winter | 0.03             | 12.3              | 5.660                    |
| U1-5 Shared Road 1 | FSR: 100 years: +0 %: 15 mins: Winter | 0.03             | 14.0              | 6.458                    |
| Catchment Area     | FSR: 100 years: +0 %: 15 mins: Winter | 0.03             | 11.8              | 5.453                    |
| Unit 4/5           | FSR: 100 years: +0 %: 15 mins: Winter | 0.21             | 83.6              | 38.616                   |
| Unit 6             | FSR: 100 years: +0 %: 15 mins: Winter | 0.17             | 69.9              | 32.306                   |
| PP5                | FSR: 100 years: +0 %: 15 mins: Winter | 0.02             | 6.7               | 3.116                    |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



|                    |                                                |      |      |        |
|--------------------|------------------------------------------------|------|------|--------|
| Unit 6 Yard        | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.11 | 43.7 | 20.171 |
| Unit 6<br>Entrance | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.01 | 4.6  | 2.127  |
| PP6                | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.04 | 14.8 | 6.835  |
| Unit 7             | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.13 | 54.3 | 25.074 |
| Unit 7 Yard        | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 27.5 | 12.720 |
| Access<br>Road 2   | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.03 | 12.2 | 5.642  |
| Lower<br>Road 2    | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.09 | 34.9 | 16.097 |
| Access<br>Road 1   | FSR: 100<br>years: +0 %:<br>15 mins:<br>Winter | 0.07 | 29.3 | 13.536 |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow             | Storm Event                            | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|--------------------|----------------------------------------|------------------|-------------------|--------------------------|
| Unit 1/2/3         | FSR: 100 years: +40 %: 15 mins: Winter | 0.25             | 141.7             | 65.426                   |
| PP1                | FSR: 100 years: +40 %: 15 mins: Winter | 0.04             | 20.6              | 9.496                    |
| PP2                | FSR: 100 years: +40 %: 15 mins: Winter | 0.02             | 14.1              | 6.527                    |
| Unit 1 Yard        | FSR: 100 years: +40 %: 15 mins: Winter | 0.03             | 19.8              | 9.157                    |
| Unit 2/3 Yard      | FSR: 100 years: +40 %: 15 mins: Winter | 0.04             | 23.4              | 10.816                   |
| PP3                | FSR: 100 years: +40 %: 15 mins: Winter | 0.02             | 12.7              | 5.849                    |
| PP4                | FSR: 100 years: +40 %: 15 mins: Winter | 0.02             | 13.4              | 6.176                    |
| Unit 4 Yard        | FSR: 100 years: +40 %: 15 mins: Winter | 0.03             | 16.7              | 7.732                    |
| Unit 5 Yard        | FSR: 100 years: +40 %: 15 mins: Winter | 0.03             | 17.2              | 7.924                    |
| U1-5 Shared Road 1 | FSR: 100 years: +40 %: 15 mins: Winter | 0.03             | 19.6              | 9.034                    |
| Catchment Area     | FSR: 100 years: +40 %: 15 mins: Winter | 0.03             | 16.5              | 7.639                    |
| Unit 4/5           | FSR: 100 years: +40 %: 15 mins: Winter | 0.21             | 117.1             | 54.064                   |
| Unit 6             | FSR: 100 years: +40 %: 15 mins: Winter | 0.17             | 97.9              | 45.228                   |
| PP5                | FSR: 100 years: +40 %: 15 mins: Winter | 0.02             | 9.4               | 4.358                    |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



|                    |                                                 |      |      |        |
|--------------------|-------------------------------------------------|------|------|--------|
| Unit 6 Yard        | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.11 | 61.2 | 28.242 |
| Unit 6<br>Entrance | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.01 | 6.4  | 2.978  |
| PP6                | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.04 | 20.7 | 9.568  |
| Unit 7             | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.13 | 76.0 | 35.102 |
| Unit 7 Yard        | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.07 | 38.6 | 17.807 |
| Access<br>Road 2   | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.03 | 17.1 | 7.900  |
| Lower<br>Road 2    | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.09 | 48.8 | 22.540 |
| Access<br>Road 1   | FSR: 100<br>years: +40 %:<br>15 mins:<br>Winter | 0.07 | 41.0 | 18.953 |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction            | Storm Event                            | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status |
|---------------------|----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|--------|
| S20                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 47.90<br>0      | 46.92<br>0       | 46.973         | 0.053          | 0.6               | 0.060                     | 0.000                    | 0.6                | 0.319                       | OK     |
| S19                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 48.17<br>5      | 46.97<br>0       | 47.013         | 0.043          | 3.1               | 0.049                     | 0.000                    | 3.3                | 3.193                       | OK     |
| S18                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 48.19<br>0      | 47.15<br>0       | 47.295         | 0.145          | 17.4              | 0.256                     | 0.000                    | 3.4                | 10.488                      | OK     |
| S17                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.293         | 0.123          | 13.0              | 0.217                     | 0.000                    | 0.0                | 6.868                       | OK     |
| S16                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.253         | 0.083          | 0.4               | 0.146                     | 0.000                    | 0.0                | 0.000                       | OK     |
| S15                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.20<br>0      | 47.27<br>0       | 47.342         | 0.072          | 13.5              | 0.127                     | 0.000                    | 8.9                | 7.874                       | OK     |
| S14                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.20<br>0      | 47.64<br>5       | 47.712         | 0.067          | 1.0               | 0.096                     | 0.000                    | 1.0                | 1.066                       | OK     |
| S10                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.41<br>0      | 48.05<br>0       | 48.157         | 0.107          | 34.6              | 0.154                     | 0.000                    | 34.2               | 15.016                      | OK     |
| S11                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.30<br>0      | 47.93<br>5       | 48.016         | 0.081          | 34.2              | 0.117                     | 0.000                    | 33.6               | 15.019                      | OK     |
| S12                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.32<br>0      | 47.64<br>5       | 47.764         | 0.119          | 16.4              | 0.170                     | 0.000                    | 19.7               | 7.021                       | OK     |
| PP9                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.44<br>5      | 48.44<br>5       | 48.445         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK     |
| S13                 | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.41<br>0      | 48.21<br>0       | 48.307         | 0.097          | 28.7              | 0.138                     | 0.000                    | 27.9               | 12.435                      | OK     |
| S9                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.05<br>0      | 47.44<br>0       | 47.483         | 0.043          | 4.7               | 0.076                     | 0.000                    | 3.0                | 2.828                       | OK     |
| S8                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.19<br>5      | 47.48<br>0       | 47.699         | 0.219          | 2.4               | 0.387                     | 0.000                    | 1.2                | 1.579                       | OK     |
| S7                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.19<br>5      | 47.64<br>5       | 47.809         | 0.164          | 33.8              | 0.234                     | 0.000                    | 39.8               | 14.633                      | OK     |
| S6                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.33<br>0      | 47.98<br>0       | 48.043         | 0.063          | 21.0              | 0.091                     | 0.000                    | 20.7               | 9.108                       | OK     |
| S4                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.06<br>0      | 47.84<br>5       | 47.917         | 0.072          | 22.7              | 0.104                     | 0.000                    | 22.2               | 10.632                      | OK     |
| S3                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.40<br>0      | 47.94<br>0       | 48.034         | 0.094          | 23.5              | 0.135                     | 0.000                    | 22.7               | 10.639                      | OK     |
| S2                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.40<br>0      | 48.00<br>0       | 48.101         | 0.101          | 24.2              | 0.145                     | 0.000                    | 23.5               | 10.645                      | OK     |
| S1                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.30<br>0      | 48.02<br>5       | 48.115         | 0.090          | 8.3               | 0.102                     | 0.000                    | 7.9                | 3.582                       | OK     |
| Watercourse Outfall | FSR: 1 years: +0 %:<br>15 mins: Summer | 47.90<br>0      | 46.88<br>0       | 46.896         | 0.016          | 0.5               | 0.000                     | 0.000                    | 0.5                | 0.298                       | OK     |
| S5                  | FSR: 1 years: +0 %:<br>15 mins: Summer | 49.00<br>0      | 47.73<br>0       | 47.799         | 0.069          | 22.2              | 0.078                     | 0.000                    | 22.0               | 10.630                      | OK     |

|                                                                    |  |                                                                          |                                         |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                                         |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF<br>Approved By:<br>HP |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                                         |                                                                                     |



**FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction | Storm Event                             | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status |
|----------|-----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|--------|
| S20      | FSR: 10 years: +0<br>%: 15 mins: Summer | 47.90<br>0      | 46.92<br>0       | 47.010         | 0.090          | 1.6               | 0.102                     | 0.000                    | 1.5                | 0.826                       | OK     |
| S19      | FSR: 10 years: +0<br>%: 15 mins: Summer | 48.17<br>5      | 46.97<br>0       | 47.023         | 0.053          | 5.1               | 0.059                     | 0.000                    | 4.8                | 5.865                       | OK     |
| S18      | FSR: 10 years: +0<br>%: 15 mins: Summer | 48.19<br>0      | 47.15<br>0       | 47.367         | 0.217          | 30.0              | 0.384                     | 0.000                    | 5.2                | 19.858                      | OK     |
| S17      | FSR: 10 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.362         | 0.192          | 20.7              | 0.340                     | 0.000                    | 0.6                | 13.449                      | OK     |
| S16      | FSR: 10 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.327         | 0.157          | 0.5               | 0.278                     | 0.000                    | 0.0                | 0.007                       | OK     |
| S15      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.27<br>0       | 47.383         | 0.113          | 27.2              | 0.199                     | 0.000                    | 17.6               | 14.624                      | OK     |
| S14      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.64<br>5       | 47.775         | 0.130          | 2.4               | 0.186                     | 0.000                    | 2.4                | 2.683                       | OK     |
| S10      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.05<br>0       | 48.205         | 0.155          | 67.1              | 0.222                     | 0.000                    | 66.4               | 29.074                      | OK     |
| S11      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.30<br>0      | 47.93<br>5       | 48.050         | 0.115          | 66.4              | 0.164                     | 0.000                    | 65.4               | 29.084                      | OK     |
| S12      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.32<br>0      | 47.64<br>5       | 47.819         | 0.174          | 31.8              | 0.249                     | 0.000                    | 48.0               | 13.584                      | OK     |
| PP9      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.44<br>5      | 48.44<br>5       | 48.445         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK     |
| S13      | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.21<br>0       | 48.350         | 0.140          | 55.6              | 0.200                     | 0.000                    | 54.2               | 24.082                      | OK     |
| S9       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.05<br>0      | 47.44<br>0       | 47.500         | 0.060          | 8.4               | 0.106                     | 0.000                    | 6.1                | 4.273                       | OK     |
| S8       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.48<br>0       | 47.754         | 0.274          | 2.7               | 0.483                     | 0.000                    | 1.3                | 1.648                       | OK     |
| S7       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.64<br>5       | 47.882         | 0.237          | 65.6              | 0.338                     | 0.000                    | 71.5               | 28.226                      | OK     |
| S6       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.33<br>0      | 47.98<br>0       | 48.068         | 0.088          | 40.7              | 0.126                     | 0.000                    | 40.2               | 17.635                      | OK     |
| S4       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.06<br>0      | 47.84<br>5       | 47.953         | 0.108          | 44.6              | 0.154                     | 0.000                    | 43.8               | 20.603                      | OK     |
| S3       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 47.94<br>0       | 48.076         | 0.136          | 45.8              | 0.194                     | 0.000                    | 44.6               | 20.609                      | OK     |
| S2       | FSR: 10 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 48.00<br>0       | 48.148         | 0.148          | 46.9              | 0.212                     | 0.000                    | 45.8               | 20.618                      | OK     |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                     |                                            |            |            |        |       |      |       |       |      |        |    |
|---------------------|--------------------------------------------|------------|------------|--------|-------|------|-------|-------|------|--------|----|
| S1                  | FSR: 10 years: +0<br>%: 15 mins:<br>Summer | 49.30<br>0 | 48.02<br>5 | 48.162 | 0.137 | 16.0 | 0.155 | 0.000 | 15.3 | 6.937  | OK |
| Watercourse Outfall | FSR: 10 years: +0<br>%: 15 mins:<br>Summer | 47.90<br>0 | 46.88<br>0 | 46.906 | 0.026 | 1.5  | 0.000 | 0.000 | 1.5  | 0.793  | OK |
| S5                  | FSR: 10 years: +0<br>%: 15 mins:<br>Summer | 49.00<br>0 | 47.73<br>0 | 47.830 | 0.100 | 43.8 | 0.113 | 0.000 | 43.5 | 20.572 | OK |

|                                                                    |  |                                                                          |                                         |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                                         |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF<br>Approved By:<br>HP |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                                         |                                                                                     |



**FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction | Storm Event                             | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|----------|-----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S20      | FSR: 30 years: +0<br>%: 15 mins: Summer | 47.90<br>0      | 46.92<br>0       | 47.024         | 0.104          | 2.0               | 0.118                     | 0.000                    | 1.9                | 1.072                       | OK         |
| S19      | FSR: 30 years: +0<br>%: 15 mins: Summer | 48.17<br>5      | 46.97<br>0       | 47.032         | 0.062          | 5.6               | 0.070                     | 0.000                    | 5.4                | 6.919                       | OK         |
| S18      | FSR: 30 years: +0<br>%: 15 mins: Summer | 48.19<br>0      | 47.15<br>0       | 47.388         | 0.238          | 37.4              | 0.421                     | 0.000                    | 5.7                | 24.111                      | Surcharged |
| S17      | FSR: 30 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.379         | 0.209          | 27.8              | 0.369                     | 0.000                    | 0.8                | 16.480                      | OK         |
| S16      | FSR: 30 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.364         | 0.194          | 0.8               | 0.342                     | 0.000                    | 0.0                | 0.009                       | OK         |
| S15      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.27<br>0       | 47.409         | 0.139          | 34.5              | 0.246                     | 0.000                    | 22.0               | 17.538                      | OK         |
| S14      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.64<br>5       | 47.809         | 0.164          | 2.9               | 0.235                     | 0.000                    | 2.9                | 3.360                       | OK         |
| S10      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.05<br>0       | 48.228         | 0.178          | 84.8              | 0.254                     | 0.000                    | 84.0               | 36.768                      | OK         |
| S11      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.30<br>0      | 47.93<br>5       | 48.066         | 0.131          | 84.0              | 0.188                     | 0.000                    | 82.9               | 36.781                      | OK         |
| S12      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.32<br>0      | 47.64<br>5       | 47.843         | 0.198          | 40.3              | 0.284                     | 0.000                    | 44.0               | 17.169                      | OK         |
| PP9      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.44<br>5      | 48.44<br>5       | 48.445         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| S13      | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.21<br>0       | 48.371         | 0.161          | 70.3              | 0.230                     | 0.000                    | 68.7               | 30.459                      | OK         |
| S9       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.05<br>0      | 47.44<br>0       | 47.507         | 0.067          | 9.9               | 0.118                     | 0.000                    | 7.7                | 5.173                       | OK         |
| S8       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.48<br>0       | 47.783         | 0.303          | 3.4               | 0.535                     | 0.000                    | 1.0                | 1.895                       | OK         |
| S7       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.64<br>5       | 47.918         | 0.273          | 83.0              | 0.391                     | 0.000                    | 126.2              | 35.696                      | OK         |
| S6       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.33<br>0      | 47.98<br>0       | 48.079         | 0.099          | 51.4              | 0.142                     | 0.000                    | 50.8               | 22.311                      | OK         |
| S4       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.06<br>0      | 47.84<br>5       | 47.970         | 0.125          | 56.7              | 0.179                     | 0.000                    | 55.8               | 26.068                      | OK         |
| S3       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 47.94<br>0       | 48.096         | 0.156          | 58.1              | 0.223                     | 0.000                    | 56.7               | 26.074                      | OK         |
| S2       | FSR: 30 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 48.00<br>0       | 48.171         | 0.171          | 59.4              | 0.244                     | 0.000                    | 58.1               | 26.083                      | OK         |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                     |                                            |            |            |        |       |      |       |       |      |        |    |
|---------------------|--------------------------------------------|------------|------------|--------|-------|------|-------|-------|------|--------|----|
| S1                  | FSR: 30 years: +0<br>%: 15 mins:<br>Summer | 49.30<br>0 | 48.02<br>5 | 48.185 | 0.160 | 20.3 | 0.181 | 0.000 | 19.4 | 8.776  | OK |
| Watercourse Outfall | FSR: 30 years: +0<br>%: 15 mins:<br>Summer | 47.90<br>0 | 46.88<br>0 | 46.910 | 0.030 | 1.9  | 0.000 | 0.000 | 1.9  | 1.034  | OK |
| S5                  | FSR: 30 years: +0<br>%: 15 mins:<br>Summer | 49.00<br>0 | 47.73<br>0 | 47.845 | 0.115 | 55.8 | 0.130 | 0.000 | 55.3 | 25.986 | OK |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction | Storm Event                              | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|----------|------------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S20      | FSR: 100 years: +0<br>%: 15 mins: Summer | 47.90<br>0      | 46.92<br>0       | 47.039         | 0.119          | 2.4               | 0.134                     | 0.000                    | 2.3                | 1.361                       | OK         |
| S19      | FSR: 100 years: +0<br>%: 15 mins: Summer | 48.17<br>5      | 46.97<br>0       | 47.047         | 0.077          | 6.1               | 0.087                     | 0.000                    | 6.1                | 8.103                       | OK         |
| S18      | FSR: 100 years: +0<br>%: 15 mins: Summer | 48.19<br>0      | 47.15<br>0       | 47.411         | 0.261          | 52.8              | 0.461                     | 0.000                    | 6.1                | 29.656                      | Surcharged |
| S17      | FSR: 100 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.411         | 0.241          | 46.2              | 0.426                     | 0.000                    | 0.7                | 20.688                      | OK         |
| S16      | FSR: 100 years: +0<br>%: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.411         | 0.241          | 2.0               | 0.426                     | 0.000                    | 0.0                | 0.012                       | OK         |
| S15      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.27<br>0       | 47.444         | 0.174          | 44.6              | 0.307                     | 0.000                    | 24.9               | 21.139                      | OK         |
| S14      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.20<br>0      | 47.64<br>5       | 47.858         | 0.213          | 3.5               | 0.305                     | 0.000                    | 3.4                | 4.060                       | OK         |
| S10      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.05<br>0       | 48.258         | 0.208          | 109.7             | 0.297                     | 0.000                    | 108.7              | 47.565                      | OK         |
| S11      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.30<br>0      | 47.93<br>5       | 48.088         | 0.153          | 108.7             | 0.219                     | 0.000                    | 107.4              | 47.581                      | OK         |
| S12      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.32<br>0      | 47.64<br>5       | 47.870         | 0.225          | 52.1              | 0.322                     | 0.000                    | 82.2               | 22.201                      | OK         |
| PP9      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.44<br>5      | 48.44<br>5       | 48.445         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| S13      | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.41<br>0      | 48.21<br>0       | 48.398         | 0.188          | 90.9              | 0.269                     | 0.000                    | 88.9               | 39.410                      | OK         |
| S9       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.05<br>0      | 47.44<br>0       | 47.515         | 0.075          | 12.1              | 0.132                     | 0.000                    | 9.6                | 6.426                       | OK         |
| S8       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.48<br>0       | 47.824         | 0.344          | 4.4               | 0.608                     | 0.000                    | 1.1                | 2.246                       | OK         |
| S7       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.19<br>5      | 47.64<br>5       | 47.970         | 0.325          | 107.6             | 0.465                     | 0.000                    | 113.2              | 46.140                      | OK         |
| S6       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.33<br>0      | 47.98<br>0       | 48.094         | 0.114          | 66.5              | 0.162                     | 0.000                    | 66.0               | 28.858                      | OK         |
| S4       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.06<br>0      | 47.84<br>5       | 47.992         | 0.147          | 73.6              | 0.211                     | 0.000                    | 72.4               | 33.724                      | OK         |
| S3       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 47.94<br>0       | 48.122         | 0.182          | 75.3              | 0.260                     | 0.000                    | 73.6               | 33.730                      | OK         |
| S2       | FSR: 100 years: +0<br>%: 15 mins: Summer | 49.40<br>0      | 48.00<br>0       | 48.200         | 0.200          | 76.9              | 0.286                     | 0.000                    | 75.3               | 33.739                      | OK         |

|                                                                    |  |                                                                          |                   |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                     |                                             |            |            |        |       |      |       |       |      |        |    |
|---------------------|---------------------------------------------|------------|------------|--------|-------|------|-------|-------|------|--------|----|
| S1                  | FSR: 100 years: +0<br>%: 15 mins:<br>Summer | 49.30<br>0 | 48.02<br>5 | 48.216 | 0.191 | 26.2 | 0.216 | 0.000 | 25.2 | 11.352 | OK |
| Watercourse Outfall | FSR: 100 years: +0<br>%: 15 mins:<br>Summer | 47.90<br>0 | 46.88<br>0 | 46.913 | 0.033 | 2.3  | 0.000 | 0.000 | 2.3  | 1.319  | OK |
| S5                  | FSR: 100 years: +0<br>%: 15 mins:<br>Summer | 49.00<br>0 | 47.73<br>0 | 47.866 | 0.136 | 72.4 | 0.154 | 0.000 | 71.9 | 33.567 | OK |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction | Storm Event                            | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|----------|----------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S20      | FSR: 100 years: +40 %: 15 mins: Summer | 47.90<br>0      | 46.92<br>0       | 47.021         | 0.101          | 1.9               | 0.115                     | 0.000                    | 1.8                | 1.245                       | OK         |
| S19      | FSR: 100 years: +40 %: 15 mins: Summer | 48.17<br>5      | 46.97<br>0       | 47.029         | 0.059          | 6.3               | 0.067                     | 0.000                    | 6.2                | 6.942                       | OK         |
| S18      | FSR: 100 years: +40 %: 15 mins: Summer | 48.19<br>0      | 47.15<br>0       | 47.497         | 0.347          | 85.6              | 0.613                     | 0.000                    | 6.3                | 36.396                      | Surcharged |
| S17      | FSR: 100 years: +40 %: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.498         | 0.328          | 73.0              | 0.579                     | 0.000                    | 3.1                | 28.648                      | OK         |
| S16      | FSR: 100 years: +40 %: 15 mins: Summer | 48.67<br>0      | 47.17<br>0       | 47.498         | 0.328          | 1.9               | 0.579                     | 0.000                    | 0.1                | 0.024                       | OK         |
| S15      | FSR: 100 years: +40 %: 15 mins: Summer | 49.20<br>0      | 47.27<br>0       | 47.496         | 0.226          | 62.3              | 0.399                     | 0.000                    | 46.6               | 24.477                      | OK         |
| S14      | FSR: 100 years: +40 %: 15 mins: Summer | 49.20<br>0      | 47.64<br>5       | 47.946         | 0.301          | 3.8               | 0.430                     | 0.000                    | 2.6                | 3.010                       | OK         |
| S10      | FSR: 100 years: +40 %: 15 mins: Summer | 49.41<br>0      | 48.05<br>0       | 48.309         | 0.259          | 153.7             | 0.370                     | 0.000                    | 152.2              | 66.598                      | OK         |
| S11      | FSR: 100 years: +40 %: 15 mins: Summer | 49.30<br>0      | 47.93<br>5       | 48.125         | 0.190          | 152.2             | 0.271                     | 0.000                    | 150.3              | 66.607                      | OK         |
| S12      | FSR: 100 years: +40 %: 15 mins: Summer | 49.32<br>0      | 47.64<br>5       | 47.946         | 0.301          | 73.0              | 0.430                     | 0.000                    | 92.8               | 31.080                      | OK         |
| PP9      | FSR: 100 years: +40 %: 15 mins: Summer | 49.44<br>5      | 48.44<br>5       | 48.445         | 0.000          | 0.0               | 0.000                     | 0.000                    | 0.0                | 0.000                       | OK         |
| S13      | FSR: 100 years: +40 %: 15 mins: Summer | 49.41<br>0      | 48.21<br>0       | 48.444         | 0.234          | 127.3             | 0.334                     | 0.000                    | 124.6              | 55.175                      | OK         |
| S9       | FSR: 100 years: +40 %: 15 mins: Summer | 49.05<br>0      | 47.44<br>0       | 47.527         | 0.087          | 16.9              | 0.154                     | 0.000                    | 13.3               | 8.276                       | OK         |
| S8       | FSR: 100 years: +40 %: 15 mins: Summer | 49.19<br>5      | 47.48<br>0       | 47.897         | 0.417          | 6.1               | 0.736                     | 0.000                    | 1.2                | 2.877                       | OK         |
| S7       | FSR: 100 years: +40 %: 15 mins: Summer | 49.19<br>5      | 47.64<br>5       | 48.009         | 0.364          | 150.9             | 0.521                     | 0.000                    | 88.2               | 64.622                      | OK         |
| S6       | FSR: 100 years: +40 %: 15 mins: Summer | 49.33<br>0      | 47.98<br>0       | 48.123         | 0.143          | 93.2              | 0.204                     | 0.000                    | 92.7               | 40.398                      | OK         |
| S4       | FSR: 100 years: +40 %: 15 mins: Summer | 49.06<br>0      | 47.84<br>5       | 48.030         | 0.185          | 103.5             | 0.265                     | 0.000                    | 102.0              | 47.093                      | OK         |
| S3       | FSR: 100 years: +40 %: 15 mins: Summer | 49.40<br>0      | 47.94<br>0       | 48.166         | 0.226          | 105.8             | 0.323                     | 0.000                    | 103.5              | 47.233                      | OK         |
| S2       | FSR: 100 years: +40 %: 15 mins: Summer | 49.40<br>0      | 48.00<br>0       | 48.250         | 0.250          | 107.7             | 0.358                     | 0.000                    | 105.8              | 47.235                      | OK         |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                     |                                              |            |            |        |       |       |       |       |       |        |    |
|---------------------|----------------------------------------------|------------|------------|--------|-------|-------|-------|-------|-------|--------|----|
| S1                  | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 49.30<br>0 | 48.02<br>5 | 48.270 | 0.245 | 36.7  | 0.277 | 0.000 | 35.4  | 15.896 | OK |
| Watercourse Outfall | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 47.90<br>0 | 46.88<br>0 | 46.909 | 0.029 | 1.8   | 0.000 | 0.000 | 1.8   | 1.208  | OK |
| S5                  | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 49.00<br>0 | 47.73<br>0 | 47.901 | 0.171 | 102.0 | 0.193 | 0.000 | 101.1 | 46.789 | OK |

|                                                                    |  |                                                                          |                   |                                                                                     |  |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |  |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |  |



**FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                           | Connection Type | From               | To                 | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status |
|------------|---------------------------------------|-----------------|--------------------|--------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|--------|
| 1.000      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S1                 | S2                 | 49.300                   | 48.118                  | 0.099               | 4.007                 | 0.4                 | 0.16            | 8.3             | OK     |
| 1.001      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S2                 | S3                 | 49.400                   | 48.104                  | 0.101               | 11.919                | 1.0                 | 0.14            | 24.8            | OK     |
| 1.003      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S3                 | S4                 | 49.400                   | 48.037                  | 0.086               | 11.912                | 1.3                 | 0.13            | 24.0            | OK     |
| 2.000      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S6                 | S7                 | 49.330                   | 48.045                  | 0.117               | 10.200                | 0.7                 | 0.07            | 21.8            | OK     |
| 2.001      | FSR: 1 years: +0 %: 15 mins: Summer   | Pipe            | S7                 | Cellular Storage 3 | 49.195                   | 47.809                  | 0.094               | 14.628                | 1.8                 | 0.48            | 39.8            | OK     |
| 1.006      | FSR: 1 years: +0 %: 120 mins: Summer  | Pipe            | Cellular Storage 3 | S8                 | 49.100                   | 47.750                  | 0.112               | 11.185                | 0.4                 | 0.01            | 1.8             | OK     |
| 1.007      | FSR: 1 years: +0 %: 2160 mins: Winter | Pipe            | S8                 | S9                 | 49.195                   | 47.759                  | 0.033               | 143.796               | 0.3                 | 0.01            | 1.6             | OK     |
| 1.008      | FSR: 1 years: +0 %: 30 mins: Winter   | Pipe            | S9                 | S15                | 49.050                   | 47.488                  | 0.064               | 4.943                 | 0.3                 | 0.02            | 3.8             | OK     |
| 3.000      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S10                | S11                | 49.410                   | 48.160                  | 0.097               | 16.818                | 1.6                 | 0.16            | 36.0            | OK     |
| 3.001      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S11                | Cellular Storage 2 | 49.300                   | 48.018                  | 0.060               | 16.821                | 3.1                 | 0.08            | 35.4            | OK     |
| 4.000      | FSR: 1 years: +0 %: 720 mins: Winter  | Pipe            | PP9                | S12                | 49.445                   | 48.449                  | 0.084               | 7.342                 | 0.0                 | 0               | 0.2             | OK     |
| 4.001      | FSR: 1 years: +0 %: 15 mins: Summer   | Pipe            | S12                | Cellular Storage 2 | 49.320                   | 47.764                  | 0.075               | 7.018                 | 1.3                 | 0.24            | 19.7            | OK     |
| 5.000      | FSR: 1 years: +0 %: 15 mins: Winter   | Pipe            | S13                | Cellular Storage 2 | 49.410                   | 48.309                  | 0.096               | 13.928                | 1.3                 | 0.13            | 29.4            | OK     |
| 3.002      | FSR: 1 years: +0 %: 600 mins: Winter  | Pipe            | Cellular Storage 2 | S14                | 49.320                   | 47.809                  | 0.164               | 111.154               | 0.1                 | 0.03            | 2.9             | OK     |
| 3.002 (1)  | FSR: 1 years: +0 %: 600 mins: Winter  | Pipe            | S14                | S15                | 49.200                   | 47.809                  | 0.024               | 111.052               | 1.0                 | 0.01            | 2.9             | OK     |
| 1.009      | FSR: 1 years: +0 %: 30 mins: Winter   | Pipe            | S15                | S18                | 49.200                   | 47.350                  | 0.107               | 14.939                | 0.3                 | 0.05            | 11.0            | OK     |
| 6.000      | FSR: 1 years: +0 %: 120 mins: Winter  | Pipe            | S17                | S18                | 48.670                   | 47.338                  | 0.178               | 0.000                 | 0.0                 | 0               | 0.6             | OK     |
| 6.001      | FSR: 1 years: +0 %: 120 mins: Winter  | Pipe            | Cellular Storage 1 | S17                | 48.670                   | 47.338                  | 0.168               | 0.000                 | 0.0                 | 0               | 0.6             | OK     |
| 6.002      | FSR: 1 years: +0 %: 8640 mins: Winter | Pipe            | S16                | Cellular Storage 1 | 48.670                   | 47.275                  | 0.105               | 0.000                 | 0.0                 | 0               | 0.0             | OK     |

|                                                                    |  |                                                                          |                   |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|       |                                            |      |      |                          |        |        |       |         |     |      |      |            |
|-------|--------------------------------------------|------|------|--------------------------|--------|--------|-------|---------|-----|------|------|------------|
| 1.010 | FSR: 1 years:<br>+0 %: 360<br>mins: Winter | Pipe | S18  | S19                      | 48.190 | 47.356 | 0.116 | 136.007 | 0.6 | 0.13 | 5.0  | OK         |
| 1.011 | FSR: 1 years:<br>+0 %: 480<br>mins: Winter | Pipe | S19  | Pond                     | 48.175 | 47.154 | 0.209 | 172.340 | 0.4 | 0.11 | 5.0  | OK         |
| 1.012 | FSR: 1 years:<br>+0 %: 600<br>mins: Winter | Pipe | Pond | S20                      | 47.900 | 47.154 | 0.225 | 198.394 | 0.1 | 0.16 | 4.7  | Surcharged |
| 1.013 | FSR: 1 years:<br>+0 %: 600<br>mins: Winter | Pipe | S20  | Watercourse<br>Outfall   | 47.900 | 47.154 | 0.050 | 198.204 | 0.9 | 0.22 | 4.7  | Surcharged |
| PPO1  | FSR: 1 years:<br>+0 %: 960<br>mins: Winter | Pipe | PP1  | S11                      | 49.248 | 48.793 | 0.010 | 5.603   | 0.5 | 0    | 0.1  | OK         |
| PPO2  | FSR: 1 years:<br>+0 %: 720<br>mins: Winter | Pipe | PP2  | PP9                      | 49.247 | 48.786 | 0.005 | 3.693   | 0.6 | 0    | 0.1  | OK         |
| PPO4  | FSR: 1 years:<br>+0 %: 720<br>mins: Winter | Pipe | PP4  | PP9                      | 49.247 | 48.785 | 0.006 | 3.651   | 0.5 | 0    | 0.1  | OK         |
| PPO6  | FSR: 1 years:<br>+0 %: 960<br>mins: Winter | Pipe | PP6  | S3                       | 49.203 | 48.747 | 0.014 | 5.727   | 0.3 | 0    | 0.1  | OK         |
| 1.004 | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe | S4   | S5                       | 49.060 | 47.920 | 0.073 | 11.905  | 1.6 | 0.06 | 23.5 | OK         |
| 1.005 | FSR: 1 years:<br>+0 %: 15<br>mins: Winter  | Pipe | S5   | Cellular<br>Storage<br>3 | 49.000 | 47.801 | 0.051 | 11.903  | 2.7 | 0.05 | 23.4 | OK         |
| PPO5  | FSR: 1 years:<br>+0 %: 480<br>mins: Winter | Pipe | PP5  | Cellular<br>Storage<br>3 | 49.142 | 48.675 | 0.076 | 2.208   | 0.0 | 0    | 0.1  | OK         |
| PPO3  | FSR: 1 years:<br>+0 %: 480<br>mins: Winter | Pipe | PP3  | Cellular<br>Storage<br>2 | 49.247 | 48.783 | 0.083 | 2.787   | 0.0 | 0    | 0.1  | OK         |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                            | Connection Type | From               | To                 | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status |
|------------|----------------------------------------|-----------------|--------------------|--------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|--------|
| 1.000      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S1                 | S2                 | 49.300                   | 48.167                  | 0.147               | 7.771                 | 0.5                 | 0.32            | 16.2            | OK     |
| 1.001      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S2                 | S3                 | 49.400                   | 48.153                  | 0.146               | 23.094                | 1.2                 | 0.27            | 48.3            | OK     |
| 1.003      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S3                 | S4                 | 49.400                   | 48.080                  | 0.126               | 23.085                | 1.4                 | 0.25            | 47.1            | OK     |
| 2.000      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S6                 | S7                 | 49.330                   | 48.071                  | 0.168               | 19.753                | 0.9                 | 0.13            | 42.4            | OK     |
| 2.001      | FSR: 10 years: +0 %: 15 mins: Summer   | Pipe            | S7                 | Cellular Storage 3 | 49.195                   | 47.882                  | 0.142               | 28.224                | 1.9                 | 0.86            | 71.5            | OK     |
| 1.006      | FSR: 10 years: +0 %: 60 mins: Summer   | Pipe            | Cellular Storage 3 | S8                 | 49.100                   | 47.816                  | 0.179               | 5.607                 | 0.4                 | 0.01            | 1.9             | OK     |
| 1.007      | FSR: 10 years: +0 %: 7200 mins: Winter | Pipe            | S8                 | S9                 | 49.195                   | 47.747                  | 0.033               | 313.385               | 0.3                 | 0.01            | 1.6             | OK     |
| 1.008      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S9                 | S15                | 49.050                   | 47.503                  | 0.093               | 4.695                 | 0.3                 | 0.03            | 6.7             | OK     |
| 3.000      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S10                | S11                | 49.410                   | 48.209                  | 0.139               | 32.561                | 1.9                 | 0.3             | 69.8            | OK     |
| 3.001      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S11                | Cellular Storage 2 | 49.300                   | 48.053                  | 0.095               | 32.572                | 3.3                 | 0.15            | 68.9            | OK     |
| 4.000      | FSR: 10 years: +0 %: 360 mins: Winter  | Pipe            | PP9                | S12                | 49.445                   | 48.452                  | 0.168               | 9.619                 | 0.0                 | 0               | 0.6             | OK     |
| 4.001      | FSR: 10 years: +0 %: 15 mins: Summer   | Pipe            | S12                | Cellular Storage 2 | 49.320                   | 47.819                  | 0.130               | 13.583                | 1.6                 | 0.58            | 48.0            | OK     |
| 5.000      | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe            | S13                | Cellular Storage 2 | 49.410                   | 48.354                  | 0.137               | 26.975                | 1.6                 | 0.26            | 57.1            | OK     |
| 3.002      | FSR: 10 years: +0 %: 120 mins: Winter  | Pipe            | Cellular Storage 2 | S14                | 49.320                   | 47.910                  | 0.265               | 30.535                | 0.1                 | 0.04            | 3.5             | OK     |

|                                                                    |  |                                                                          |                   |                    |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|           |                                        |      |                    |                     |        |        |       |         |     |      |      |            |
|-----------|----------------------------------------|------|--------------------|---------------------|--------|--------|-------|---------|-----|------|------|------------|
| 3.002 (1) | FSR: 10 years: +0 %: 240 mins: Summer  | Pipe | S14                | S15                 | 49.200 | 47.911 | 0.025 | 65.125  | 1.0 | 0.01 | 3.4  | OK         |
| 1.009     | FSR: 10 years: +0 %: 30 mins: Winter   | Pipe | S15                | S18                 | 49.200 | 47.385 | 0.174 | 25.634  | 0.4 | 0.1  | 21.0 | OK         |
| 6.000     | FSR: 10 years: +0 %: 180 mins: Winter  | Pipe | S17                | S18                 | 48.670 | 47.453 | 0.293 | 0.000   | 0.0 | 0.01 | 1.8  | OK         |
| 6.001     | FSR: 10 years: +0 %: 180 mins: Winter  | Pipe | Cellular Storage 1 | S17                 | 48.670 | 47.453 | 0.283 | 0.000   | 0.0 | 0.01 | 1.7  | OK         |
| 6.002     | FSR: 10 years: +0 %: 180 mins: Winter  | Pipe | S16                | Cellular Storage 1  | 48.670 | 47.453 | 0.283 | 0.000   | 0.0 | 0    | 0.0  | OK         |
| 1.010     | FSR: 10 years: +0 %: 240 mins: Summer  | Pipe | S18                | S19                 | 48.190 | 47.437 | 0.154 | 121.219 | 0.6 | 0.16 | 6.3  | Surcharged |
| 1.011     | FSR: 10 years: +0 %: 600 mins: Winter  | Pipe | S19                | Pond                | 48.175 | 47.364 | 0.225 | 244.459 | 0.5 | 0.14 | 6.2  | Surcharged |
| 1.012     | FSR: 10 years: +0 %: 600 mins: Winter  | Pipe | Pond               | S20                 | 47.900 | 47.363 | 0.225 | 213.822 | 0.1 | 0.18 | 5.3  | Surcharged |
| 1.013     | FSR: 10 years: +0 %: 2880 mins: Winter | Pipe | S20                | Watercourse Outfall | 47.900 | 47.207 | 0.054 | 696.537 | 0.9 | 0.25 | 5.3  | Surcharged |
| PPO1      | FSR: 10 years: +0 %: 600 mins: Winter  | Pipe | PP1                | S11                 | 49.248 | 48.824 | 0.033 | 8.387   | 0.5 | 0.01 | 0.3  | OK         |
| PPO2      | FSR: 10 years: +0 %: 480 mins: Winter  | Pipe | PP2                | PP9                 | 49.247 | 48.815 | 0.008 | 5.808   | 0.8 | 0.01 | 0.3  | OK         |
| PPO4      | FSR: 10 years: +0 %: 360 mins: Winter  | Pipe | PP4                | PP9                 | 49.247 | 48.813 | 0.010 | 4.779   | 0.6 | 0.01 | 0.3  | OK         |
| PPO6      | FSR: 10 years: +0 %: 600 mins: Winter  | Pipe | PP6                | S3                  | 49.203 | 48.778 | 0.022 | 8.537   | 0.5 | 0.01 | 0.3  | OK         |
| 1.004     | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe | S4                 | S5                  | 49.060 | 47.957 | 0.108 | 23.079  | 1.8 | 0.12 | 46.4 | OK         |
| 1.005     | FSR: 10 years: +0 %: 15 mins: Winter   | Pipe | S5                 | Cellular Storage 3  | 49.000 | 47.834 | 0.092 | 23.025  | 2.9 | 0.1  | 46.0 | OK         |
| PPO5      | FSR: 10 years: +0 %: 240 mins: Winter  | Pipe | PP5                | Cellular Storage 3  | 49.142 | 48.701 | 0.100 | 2.950   | 0.0 | 0.01 | 0.3  | OK         |
| PPO3      | FSR: 10 years: +0 %: 360 mins: Winter  | Pipe | PP3                | Cellular Storage 2  | 49.247 | 48.810 | 0.100 | 4.794   | 0.0 | 0.01 | 0.3  | OK         |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



**FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                             | Connection Type | From               | To                 | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status |
|------------|-----------------------------------------|-----------------|--------------------|--------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|--------|
| 1.000      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S1                 | S2                 | 49.300                   | 48.191                  | 0.171               | 9.828                 | 0.5                 | 0.4             | 20.5            | OK     |
| 1.001      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S2                 | S3                 | 49.400                   | 48.176                  | 0.168               | 29.210                | 1.3                 | 0.34            | 61.2            | OK     |
| 1.003      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S3                 | S4                 | 49.400                   | 48.101                  | 0.145               | 29.201                | 1.5                 | 0.32            | 59.8            | OK     |
| 2.000      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S6                 | S7                 | 49.330                   | 48.082                  | 0.200               | 24.985                | 0.9                 | 0.17            | 53.7            | OK     |
| 2.001      | FSR: 30 years: +0 %: 15 mins: Summer    | Pipe            | S7                 | Cellular Storage 3 | 49.195                   | 47.918                  | 0.167               | 35.695                | 2.6                 | 1.52            | 126.2           | OK     |
| 1.006      | FSR: 30 years: +0 %: 120 mins: Winter   | Pipe            | Cellular Storage 3 | S8                 | 49.100                   | 47.940                  | 0.303               | 13.747                | 0.4                 | 0.01            | 1.9             | OK     |
| 1.007      | FSR: 30 years: +0 %: 10080 mins: Winter | Pipe            | S8                 | S9                 | 49.195                   | 47.716                  | 0.033               | 409.157               | 0.3                 | 0.01            | 1.6             | OK     |
| 1.008      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S9                 | S15                | 49.050                   | 47.509                  | 0.110               | 5.704                 | 0.2                 | 0.04            | 8.2             | OK     |
| 3.000      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S10                | S11                | 49.410                   | 48.233                  | 0.159               | 41.182                | 2.0                 | 0.39            | 88.4            | OK     |
| 3.001      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S11                | Cellular Storage 2 | 49.300                   | 48.070                  | 0.118               | 41.195                | 3.4                 | 0.19            | 87.2            | OK     |
| 4.000      | FSR: 30 years: +0 %: 360 mins: Winter   | Pipe            | PP9                | S12                | 49.445                   | 48.453                  | 0.222               | 13.242                | 0.0                 | 0               | 0.9             | OK     |
| 4.001      | FSR: 30 years: +0 %: 15 mins: Summer    | Pipe            | S12                | Cellular Storage 2 | 49.320                   | 47.843                  | 0.165               | 17.168                | 1.2                 | 0.53            | 44.0            | OK     |
| 5.000      | FSR: 30 years: +0 %: 15 mins: Winter    | Pipe            | S13                | Cellular Storage 2 | 49.410                   | 48.376                  | 0.156               | 34.117                | 1.7                 | 0.33            | 72.3            | OK     |
| 3.002      | FSR: 30 years: +0 %: 60 mins: Winter    | Pipe            | Cellular Storage 2 | S14                | 49.320                   | 47.939                  | 0.294               | 13.199                | 0.1                 | 0.04            | 3.6             | OK     |

|                                                                    |  |                                                                          |                   |                                                                                     |  |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |  |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |  |

|           |                                                 |      |                          |                            |        |        |       |         |     |      |      |                |
|-----------|-------------------------------------------------|------|--------------------------|----------------------------|--------|--------|-------|---------|-----|------|------|----------------|
| 3.002 (1) | FSR: 30<br>years: +0 %:<br>4320 mins:<br>Winter | Pipe | S14                      | S15                        | 49.200 | 47.876 | 0.074 | 480.236 | 1.0 | 0.01 | 3.4  | OK             |
| 1.009     | FSR: 30<br>years: +0 %:<br>30 mins:<br>Winter   | Pipe | S15                      | S18                        | 49.200 | 47.433 | 0.223 | 29.792  | 0.4 | 0.12 | 25.6 | OK             |
| 6.000     | FSR: 30<br>years: +0 %:<br>60 mins:<br>Winter   | Pipe | S17                      | S18                        | 48.670 | 47.481 | 0.321 | 0.000   | 0.0 | 0.01 | 1.8  | OK             |
| 6.001     | FSR: 30<br>years: +0 %:<br>60 mins:<br>Winter   | Pipe | Cellular<br>Storage<br>1 | S17                        | 48.670 | 47.481 | 0.311 | 0.000   | 0.0 | 0.01 | 1.7  | OK             |
| 6.002     | FSR: 30<br>years: +0 %:<br>60 mins:<br>Winter   | Pipe | S16                      | Cellular<br>Storage<br>1   | 48.670 | 47.481 | 0.311 | 0.000   | 0.0 | 0    | 0.0  | OK             |
| 1.010     | FSR: 30<br>years: +0 %:<br>180 mins:<br>Winter  | Pipe | S18                      | S19                        | 48.190 | 47.557 | 0.098 | 78.555  | 0.7 | 0.16 | 6.3  | Surch<br>arged |
| 1.011     | FSR: 30<br>years: +0 %:<br>960 mins:<br>Winter  | Pipe | S19                      | Pond                       | 48.175 | 47.441 | 0.225 | 410.550 | 0.4 | 0.14 | 6.2  | Surch<br>arged |
| 1.012     | FSR: 30<br>years: +0 %:<br>960 mins:<br>Winter  | Pipe | Pond                     | S20                        | 47.900 | 47.440 | 0.225 | 374.686 | 0.1 | 0.18 | 5.3  | Surch<br>arged |
| 1.013     | FSR: 30<br>years: +0 %:<br>4320 mins:<br>Summer | Pipe | S20                      | Waterco<br>urse<br>Outfall | 47.900 | 47.214 | 0.054 | 845.187 | 0.9 | 0.25 | 5.3  | Surch<br>arged |
| PPO1      | FSR: 30<br>years: +0 %:<br>480 mins:<br>Winter  | Pipe | PP1                      | S11                        | 49.248 | 48.843 | 0.087 | 9.973   | 0.1 | 0.02 | 0.5  | OK             |
| PPO2      | FSR: 30<br>years: +0 %:<br>360 mins:<br>Winter  | Pipe | PP2                      | PP9                        | 49.247 | 48.832 | 0.009 | 6.684   | 0.9 | 0.01 | 0.4  | OK             |
| PPO4      | FSR: 30<br>years: +0 %:<br>240 mins:<br>Winter  | Pipe | PP4                      | PP9                        | 49.247 | 48.831 | 0.012 | 5.051   | 0.7 | 0.02 | 0.4  | OK             |
| PPO6      | FSR: 30<br>years: +0 %:<br>480 mins:<br>Winter  | Pipe | PP6                      | S3                         | 49.203 | 48.797 | 0.048 | 10.134  | 0.2 | 0.01 | 0.5  | OK             |
| 1.004     | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter   | Pipe | S4                       | S5                         | 49.060 | 47.974 | 0.125 | 29.195  | 1.8 | 0.16 | 58.9 | OK             |
| 1.005     | FSR: 30<br>years: +0 %:<br>15 mins:<br>Winter   | Pipe | S5                       | Cellular<br>Storage<br>3   | 49.000 | 47.850 | 0.114 | 29.085  | 3.0 | 0.13 | 58.5 | OK             |
| PPO5      | FSR: 30<br>years: +0 %:<br>240 mins:<br>Winter  | Pipe | PP5                      | Cellular<br>Storage<br>3   | 49.142 | 48.716 | 0.100 | 4.059   | 0.0 | 0.02 | 0.4  | OK             |
| PPO3      | FSR: 30<br>years: +0 %:<br>240 mins:<br>Winter  | Pipe | PP3                      | Cellular<br>Storage<br>2   | 49.247 | 48.827 | 0.100 | 5.138   | 0.1 | 0.01 | 0.5  | OK             |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                             | Connection Type | From               | To                 | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status |
|------------|-----------------------------------------|-----------------|--------------------|--------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|--------|
| 1.000      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S1                 | S2                 | 49.300                   | 48.223                  | 0.203               | 12.713                | 0.5                 | 0.52            | 26.6            | OK     |
| 1.001      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S2                 | S3                 | 49.400                   | 48.207                  | 0.197               | 37.786                | 1.3                 | 0.44            | 79.4            | OK     |
| 1.003      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S3                 | S4                 | 49.400                   | 48.128                  | 0.170               | 37.777                | 1.6                 | 0.42            | 77.7            | OK     |
| 2.000      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S6                 | S7                 | 49.330                   | 48.097                  | 0.229               | 32.323                | 1.0                 | 0.22            | 69.6            | OK     |
| 2.001      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S7                 | Cellular Storage 3 | 49.195                   | 47.987                  | 0.216               | 51.678                | 2.3                 | 1.79            | 148.6           | OK     |
| 1.006      | FSR: 100 years: +0 %: 60 mins: Summer   | Pipe            | Cellular Storage 3 | S8                 | 49.100                   | 47.936                  | 0.299               | 5.747                 | 0.4                 | 0.01            | 2.0             | OK     |
| 1.007      | FSR: 100 years: +0 %: 8640 mins: Winter | Pipe            | S8                 | S9                 | 49.195                   | 47.913                  | 0.033               | 491.499               | 0.3                 | 0.01            | 1.6             | OK     |
| 1.008      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S9                 | S15                | 49.050                   | 47.517                  | 0.130               | 7.108                 | 0.2                 | 0.05            | 10.3            | OK     |
| 3.000      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S10                | S11                | 49.410                   | 48.264                  | 0.186               | 53.277                | 2.1                 | 0.5             | 114.3           | OK     |
| 3.001      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S11                | Cellular Storage 2 | 49.300                   | 48.093                  | 0.145               | 53.293                | 3.5                 | 0.25            | 113.0           | OK     |
| 4.000      | FSR: 100 years: +0 %: 240 mins: Winter  | Pipe            | PP9                | S12                | 49.445                   | 48.455                  | 0.225               | 14.690                | 0.0                 | 0               | 1.3             | OK     |
| 4.001      | FSR: 100 years: +0 %: 15 mins: Summer   | Pipe            | S12                | Cellular Storage 2 | 49.320                   | 47.870                  | 0.213               | 22.200                | 1.8                 | 0.99            | 82.2            | OK     |
| 5.000      | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe            | S13                | Cellular Storage 2 | 49.410                   | 48.404                  | 0.182               | 44.133                | 1.8                 | 0.42            | 93.6            | OK     |
| 3.002      | FSR: 100 years: +0 %: 30 mins: Winter   | Pipe            | Cellular Storage 2 | S14                | 49.320                   | 47.959                  | 0.314               | 6.825                 | 0.2                 | 0.05            | 4.0             | OK     |

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| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  |  |  | Date:<br>06/06/2025                                                      |  |  |  |  |  |  |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  |  |  | Designed by:<br>HW         Checked by:<br>GF         Approved By:<br>HP  |  |  |  |                                                                                     |  |  |  |
|                                                                    |  |  |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |  |  |  |                                                                                     |  |  |  |

|           |                                         |      |                    |                     |        |        |       |          |     |      |      |            |
|-----------|-----------------------------------------|------|--------------------|---------------------|--------|--------|-------|----------|-----|------|------|------------|
| 3.002 (1) | FSR: 100 years: +0 %: 960 mins: Winter  | Pipe | S14                | S15                 | 49.200 | 48.273 | 0.138 | 267.157  | 1.0 | 0.01 | 3.4  | Surcharged |
| 1.009     | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe | S15                | S18                 | 49.200 | 47.453 | 0.226 | 22.686   | 0.4 | 0.16 | 33.0 | OK         |
| 6.000     | FSR: 100 years: +0 %: 30 mins: Summer   | Pipe | S17                | S18                 | 48.670 | 47.470 | 0.310 | 0.000    | 0.0 | 0.01 | 1.8  | OK         |
| 6.001     | FSR: 100 years: +0 %: 30 mins: Summer   | Pipe | Cellular Storage 1 | S17                 | 48.670 | 47.470 | 0.300 | 0.000    | 0.0 | 0.01 | 1.7  | OK         |
| 6.002     | FSR: 100 years: +0 %: 30 mins: Summer   | Pipe | S16                | Cellular Storage 1  | 48.670 | 47.470 | 0.300 | 0.000    | 0.0 | 0    | 0.0  | OK         |
| 1.010     | FSR: 100 years: +0 %: 120 mins: Summer  | Pipe | S18                | S19                 | 48.190 | 47.589 | 0.101 | 53.419   | 0.7 | 0.16 | 6.3  | Surcharged |
| 1.011     | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe | S19                | Pond                | 48.175 | 47.051 | 0.103 | 8.511    | 1.1 | 0.14 | 6.3  | OK         |
| 1.012     | FSR: 100 years: +0 %: 1440 mins: Summer | Pipe | Pond               | S20                 | 47.900 | 47.511 | 0.225 | 592.170  | 0.1 | 0.18 | 5.3  | Surcharged |
| 1.013     | FSR: 100 years: +0 %: 4320 mins: Winter | Pipe | S20                | Watercourse Outfall | 47.900 | 47.217 | 0.054 | 1186.302 | 0.9 | 0.25 | 5.3  | Surcharged |
| PPO1      | FSR: 100 years: +0 %: 360 mins: Winter  | Pipe | PP1                | S11                 | 49.248 | 48.869 | 0.150 | 11.814   | 0.0 | 0.02 | 0.7  | OK         |
| PPO2      | FSR: 100 years: +0 %: 240 mins: Winter  | Pipe | PP2                | PP9                 | 49.247 | 48.856 | 0.011 | 7.389    | 1.1 | 0.01 | 0.7  | OK         |
| PPO4      | FSR: 100 years: +0 %: 240 mins: Winter  | Pipe | PP4                | PP9                 | 49.247 | 48.854 | 0.014 | 7.306    | 0.8 | 0.03 | 0.7  | OK         |
| PPO6      | FSR: 100 years: +0 %: 360 mins: Winter  | Pipe | PP6                | S3                  | 49.203 | 48.823 | 0.105 | 12.035   | 0.1 | 0.02 | 0.7  | OK         |
| 1.004     | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe | S4                 | S5                  | 49.060 | 47.998 | 0.147 | 37.772   | 1.9 | 0.2  | 76.6 | OK         |
| 1.005     | FSR: 100 years: +0 %: 15 mins: Winter   | Pipe | S5                 | Cellular Storage 3  | 49.000 | 47.872 | 0.158 | 37.573   | 3.1 | 0.17 | 76.0 | OK         |
| PPO5      | FSR: 100 years: +0 %: 180 mins: Winter  | Pipe | PP5                | Cellular Storage 3  | 49.142 | 48.738 | 0.100 | 4.859    | 0.1 | 0.03 | 0.6  | Surcharged |
| PPO3      | FSR: 100 years: +0 %: 240 mins: Winter  | Pipe | PP3                | Cellular Storage 2  | 49.247 | 48.849 | 0.100 | 7.321    | 0.1 | 0.02 | 0.7  | Surcharged |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |  |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow**

| Connection | Storm Event                              | Connection Type | From               | To                 | Upstream Cover Level (m) | Max. US Water Level (m) | Max. Flow Depth (m) | Discharge Volume (m³) | Max. Velocity (m/s) | Flow / Capacity | Max. Flow (L/s) | Status     |
|------------|------------------------------------------|-----------------|--------------------|--------------------|--------------------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-----------------|------------|
| 1.000      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S1                 | S2                 | 49.300                   | 48.281                  | 0.258               | 17.800                | 0.6                 | 0.73            | 37.3            | OK         |
| 1.001      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S2                 | S3                 | 49.400                   | 48.260                  | 0.247               | 52.900                | 1.4                 | 0.61            | 111.4           | OK         |
| 1.003      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S3                 | S4                 | 49.400                   | 48.174                  | 0.213               | 52.903                | 1.7                 | 0.59            | 109.2           | OK         |
| 2.000      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S6                 | S7                 | 49.330                   | 48.129                  | 0.265               | 45.248                | 1.2                 | 0.31            | 98.9            | OK         |
| 2.001      | FSR: 100 years: +40 %: 30 mins: Summer   | Pipe            | S7                 | Cellular Storage 3 | 49.195                   | 47.974                  | 0.329               | 84.944                | 2.4                 | 1.84            | 152.0           | OK         |
| 1.006      | FSR: 100 years: +40 %: 60 mins: Winter   | Pipe            | Cellular Storage 3 | S8                 | 49.100                   | 48.103                  | 0.375               | 4.571                 | 0.4                 | 0.01            | 2.1             | Surcharged |
| 1.007      | FSR: 100 years: +40 %: 1440 mins: Winter | Pipe            | S8                 | S9                 | 49.195                   | 48.731                  | 0.499               | 227.594               | 0.3                 | 0.01            | 1.7             | Surcharged |
| 1.008      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S9                 | S15                | 49.050                   | 47.530                  | 0.174               | 8.220                 | 0.3                 | 0.07            | 14.2            | OK         |
| 3.000      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S10                | S11                | 49.410                   | 48.318                  | 0.233               | 74.582                | 2.2                 | 0.7             | 160.1           | OK         |
| 3.001      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S11                | Cellular Storage 2 | 49.300                   | 48.132                  | 0.193               | 74.419                | 3.7                 | 0.35            | 158.1           | OK         |
| 4.000      | FSR: 100 years: +40 %: 180 mins: Winter  | Pipe            | PP9                | S12                | 49.445                   | 48.458                  | 0.225               | 19.083                | 0.1                 | 0.01            | 2.3             | OK         |
| 4.001      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S12                | Cellular Storage 2 | 49.320                   | 47.982                  | 0.337               | 34.814                | 1.5                 | 1.23            | 101.6           | OK         |
| 5.000      | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe            | S13                | Cellular Storage 2 | 49.410                   | 48.452                  | 0.225               | 61.790                | 1.9                 | 0.6             | 131.2           | OK         |
| 3.002      | FSR: 100 years: +40 %: 720 mins: Winter  | Pipe            | Cellular Storage 2 | S14                | 49.320                   | 48.999                  | 0.375               | 233.856               | 0.1                 | 0.06            | 5.0             | Surcharged |

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|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 1 |  | Date:<br>06/06/2025                                                      |                   |                    |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Connections Summary<br>Storm Phase: Phase |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|           |                                          |      |                    |                     |        |        |       |          |     |      |       |            |
|-----------|------------------------------------------|------|--------------------|---------------------|--------|--------|-------|----------|-----|------|-------|------------|
| 3.002 (1) | FSR: 100 years: +40 %: 600 mins: Winter  | Pipe | S14                | S15                 | 49.200 | 48.991 | 0.375 | 195.433  | 1.0 | 0.01 | 3.7   | Flood Risk |
| 1.009     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | S15                | S18                 | 49.200 | 47.529 | 0.317 | 25.660   | 0.5 | 0.25 | 53.6  | OK         |
| 6.000     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | S17                | S18                 | 48.670 | 47.525 | 0.365 | 0.000    | 0.0 | 0.02 | 4.9   | OK         |
| 6.001     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | Cellular Storage 1 | S17                 | 48.670 | 47.525 | 0.355 | 0.000    | 0.0 | 0.03 | 4.7   | OK         |
| 6.002     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | S16                | Cellular Storage 1  | 48.670 | 47.525 | 0.355 | 0.000    | 0.0 | 0    | 0.1   | OK         |
| 1.010     | FSR: 100 years: +40 %: 960 mins: Summer  | Pipe | S18                | S19                 | 48.190 | 47.853 | 0.225 | 493.312  | 0.5 | 0.24 | 9.6   | Surcharged |
| 1.011     | FSR: 100 years: +40 %: 960 mins: Summer  | Pipe | S19                | Pond                | 48.175 | 47.588 | 0.225 | 491.673  | 0.5 | 0.24 | 10.4  | Surcharged |
| 1.012     | FSR: 100 years: +40 %: 1440 mins: Summer | Pipe | Pond               | S20                 | 47.900 | 47.671 | 0.225 | 669.342  | 0.1 | 0.18 | 5.3   | Surcharged |
| 1.013     | FSR: 100 years: +40 %: 8640 mins: Summer | Pipe | S20                | Watercourse Outfall | 47.900 | 47.220 | 0.054 | 1695.942 | 0.9 | 0.25 | 5.3   | Surcharged |
| PPO1      | FSR: 100 years: +40 %: 240 mins: Winter  | Pipe | PP1                | S11                 | 49.248 | 48.912 | 0.150 | 14.218   | 0.1 | 0.04 | 1.2   | Surcharged |
| PPO2      | FSR: 100 years: +40 %: 180 mins: Winter  | Pipe | PP2                | PP9                 | 49.247 | 48.894 | 0.015 | 9.599    | 1.3 | 0.02 | 1.1   | Surcharged |
| PPO4      | FSR: 100 years: +40 %: 180 mins: Winter  | Pipe | PP4                | PP9                 | 49.247 | 48.892 | 0.019 | 9.491    | 0.9 | 0.05 | 1.2   | Surcharged |
| PPO6      | FSR: 100 years: +40 %: 240 mins: Winter  | Pipe | PP6                | S3                  | 49.203 | 48.865 | 0.150 | 14.495   | 0.1 | 0.04 | 1.3   | Surcharged |
| 1.004     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | S4                 | S5                  | 49.060 | 48.038 | 0.186 | 52.654   | 2.0 | 0.29 | 107.7 | OK         |
| 1.005     | FSR: 100 years: +40 %: 15 mins: Winter   | Pipe | S5                 | Cellular Storage 3  | 49.000 | 47.927 | 0.239 | 52.287   | 3.3 | 0.24 | 106.8 | OK         |
| PPO5      | FSR: 100 years: +40 %: 180 mins: Winter  | Pipe | PP5                | Cellular Storage 3  | 49.142 | 48.770 | 0.100 | 7.452    | 0.1 | 0.05 | 1.0   | Surcharged |
| PPO3      | FSR: 100 years: +40 %: 180 mins: Winter  | Pipe | PP3                | Cellular Storage 2  | 49.247 | 48.884 | 0.100 | 9.531    | 0.2 | 0.04 | 1.2   | Surcharged |

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 | Date:<br>06/06/0025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Junctions<br>Storm Phase: Phase           | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



Outlets

| Junction | Outlet Name                                                                                                                                                                                                                                  | Outgoing Connection                    | Outlet Type    |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------|
| S23      | Outlet                                                                                                                                                                                                                                       | 7.000                                  | Free Discharge |
|          | Outlet                                                                                                                                                                                                                                       | 7.002                                  | Hydro-Brake®   |
|          | Invert Level (m)                                                                                                                                                                                                                             | 46.840                                 |                |
|          | Design Depth (m)                                                                                                                                                                                                                             | 0.750                                  |                |
|          | Design Flow (L/s)                                                                                                                                                                                                                            | 2.0                                    |                |
|          | Objective                                                                                                                                                                                                                                    | Minimise Upstream Storage Requirements |                |
|          | Application                                                                                                                                                                                                                                  | Surface Water Only                     |                |
|          | Sump Available                                                                                                                                                                                                                               | <input type="checkbox"/>               |                |
|          | Unit Reference                                                                                                                                                                                                                               | CHE-0069-2000-0750-2000                |                |
|          | <div> <div> <div>Depth (m)</div> <div> <div>0.8</div> <div>0.6</div> <div>0.4</div> <div>0.2</div> <div>0</div> </div> </div> <div> <div>0</div> <div>0.5</div> <div>1</div> <div>1.5</div> <div>2</div> </div> <div>Flow (L/s)</div> </div> |                                        |                |
| S24      |                                                                                                                                                                                                                                              |                                        |                |

|                                                                    |  |                                                                          |                   |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 |  | Date:<br>06/06/0025                                                      |                   |
|                                                                    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |
|                                                                    |  | Approved By:<br>HP                                                       |                   |
| Report Details:<br>Type: Connections<br>Storm Phase: Phase         |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |



| Name  | Length (m) | Connection Type | Slope (1:X) | Manning's n | Colebrook-White Roughness (mm) | Diameter / Base Width (mm) | Upstream Cover Level (m) | Upstream Invert Level (m) |
|-------|------------|-----------------|-------------|-------------|--------------------------------|----------------------------|--------------------------|---------------------------|
| 7.002 | 2.934      | Pipe            | 20.960      |             | 0.6                            | 100                        | 47.800                   | 46.840                    |
| 7.000 | 3.318      | Pipe            | 28.853      |             | 0.6                            | 300                        | 48.000                   | 47.160                    |
| 7.001 | 2.015      | Pipe            | 0.000       |             | 0.6                            | 300                        | 47.762                   | 46.840                    |

| Name  | Downstream Cover Level (m) | Downstream Invert Level (m) | Lock   | Flow Restriction (L/s) | Culvert Type | Culvert Entrance |
|-------|----------------------------|-----------------------------|--------|------------------------|--------------|------------------|
| 7.002 | 48.000                     | 46.700                      | None   | 2.2                    | (None)       | (None)           |
| 7.000 | 47.045                     | 47.045                      | Levels |                        | (None)       | (None)           |
| 7.001 | 47.800                     | 46.840                      | None   |                        | (None)       | (None)           |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 |  | Date:<br>06/06/0025                                                      |                   |  |
| Report Details:<br>Type: Manhole Schedule<br>Storm Phase: Phase    |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |

| Name                         | Cover Level (m)<br>Invert Level (m) | Manhole Size (m)            | Connection Details   |                 |                       |                      | Type           |
|------------------------------|-------------------------------------|-----------------------------|----------------------|-----------------|-----------------------|----------------------|----------------|
| Coordinates (m)              | Depth (m)                           |                             | Incoming Connections | Connection Type | Connection Invert (m) | Connection Size (mm) | Junction Type  |
|                              |                                     |                             | Outgoing Connections |                 |                       |                      | Cover          |
| S23                          | 48.000<br>47.160                    | Diameter /<br>Length: 1.200 |                      |                 |                       |                      | Manhole        |
| E:474913.182<br>N:167479.457 | 0.840                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 7.000            | Pipe            | 47.160                | Diam/Width:300       | Not Applicable |
| S24                          | 47.800<br>46.840                    | Diameter /<br>Length: 1.200 | {1} 7.001            | Pipe            | 46.840                | Diam/Width:300       | Manhole        |
| E:474913.958<br>N:167373.911 | 0.960                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             | {a} 7.002            | Pipe            | 46.840                | Diam/Width:100       | Not Applicable |
| Existing Watercourse         | 48.000<br>46.700                    | Diameter /<br>Length: 1.200 | {1} 7.002            | Pipe            | 46.700                | Diam/Width:100       | Manhole        |
| E:474911.428<br>N:167372.425 | 1.300                               |                             |                      |                 |                       |                      |                |
|                              |                                     |                             |                      |                 |                       |                      | Not Applicable |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 |  | Date:<br>06/06/0025                                                      |                   |  |
| Report Details:<br>Type: Inflow Summary<br>Storm Phase: Phase      |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |

| Inflow Label   | Connected To | Flow (L/s) | Runoff Method         | Area (ha)   | Percentage Impervious (%) | Urban Creep (%) | Adjusted Percentage Impervious (%) | Area Analysed (ha) |
|----------------|--------------|------------|-----------------------|-------------|---------------------------|-----------------|------------------------------------|--------------------|
| Catchment Area | S23          |            | Time of Concentration | 0.18        | 100                       | 0               | 100                                | 0.18               |
| <b>TOTAL</b>   |              | <b>0.0</b> |                       | <b>0.18</b> |                           |                 |                                    | <b>0.18</b>        |

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 | Date:<br>06/06/0025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Outfall Details<br>Storm Phase: Phase     | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



Outfalls

| Outfall              | Outfall Type   | Gated | Fixed Surcharged<br>Level (m) | Level Curve |
|----------------------|----------------|-------|-------------------------------|-------------|
| Existing Watercourse | Free Discharge |       |                               |             |

|                                                                    |                                                                          |                   |                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 | Date:<br>06/06/0025                                                      |                   |                    |
|                                                                    | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Title:<br><br>Rainfall Analysis Criteria                    | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |



|                                 |                          |
|---------------------------------|--------------------------|
| Runoff Type                     | Dynamic                  |
| Output Interval (mins)          | 5                        |
| Time Step                       | Default                  |
| Urban Creep                     | Apply Global Value       |
| Urban Creep Global Value (%)    | 0                        |
| Junction Flood Risk Margin (mm) | 300                      |
| Perform No Discharge Analysis   | <input type="checkbox"/> |

## Rainfall

FSR

Type: FSR

|            |                                     |
|------------|-------------------------------------|
| Region     | England And Wales                   |
| M5-60 (mm) | 18.3                                |
| Ratio R    | 0.400                               |
| Summer     | <input checked="" type="checkbox"/> |
| Winter     | <input checked="" type="checkbox"/> |

## Return Period

| Return Period (years) | Increase Rainfall (%) |
|-----------------------|-----------------------|
| 1.0                   | 0.000                 |
| 30.0                  | 0.000                 |
| 100.0                 | 0.000                 |
| 100.0                 | 40.000                |

## Storm Durations

| Duration (mins) | Run Time (mins) |
|-----------------|-----------------|
| 15              | 30              |
| 30              | 60              |
| 60              | 120             |
| 120             | 240             |
| 180             | 360             |
| 240             | 480             |
| 360             | 720             |
| 480             | 960             |
| 600             | 1200            |
| 720             | 1440            |
| 960             | 1920            |
| 1440            | 2880            |
| 2160            | 4320            |
| 2880            | 5760            |
| 4320            | 8640            |
| 5760            | 11520           |
| 7200            | 14400           |
| 8640            | 17280           |
| 10080           | 20160           |

|                                                                    |  |                                                                          |                   |                                                                                     |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 |  | Date:<br>06/06/0025                                                      |                   |  |
| Report Details:<br>Type: Inflows Summary<br>Storm Phase: Phase     |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow**

| Inflow         | Storm Event                                  | Inflow Area (ha) | Max. Inflow (L/s) | Total Inflow Volume (m³) |
|----------------|----------------------------------------------|------------------|-------------------|--------------------------|
| Catchment Area | FSR: 100 years: +40 %:<br>15 mins:<br>Winter | 0.18             | 102.5             | 47.365                   |

|                                                                    |  |                                                                          |                   |                                                                                     |  |
|--------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|--|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2 |  | Date:<br>06/06/0025                                                      |                   |  |  |
| Report Details:<br>Type: Junctions Summary<br>Storm Phase: Phase   |  | Designed by:<br>HW                                                       | Checked by:<br>GF |                                                                                     |  |
|                                                                    |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                                                                                     |  |



**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flooded Volume**

| Junction             | Storm Event                                  | Cover Level (m) | Invert Level (m) | Max. Level (m) | Max. Depth (m) | Max. Inflow (L/s) | Max. Resident Volume (m³) | Max. Flooded Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Status     |
|----------------------|----------------------------------------------|-----------------|------------------|----------------|----------------|-------------------|---------------------------|--------------------------|--------------------|-----------------------------|------------|
| S23                  | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 48.00<br>0      | 47.16<br>0       | 47.398         | 0.238          | 97.5              | 0.269                     | 0.000                    | 96.8               | 42.123                      | OK         |
| S24                  | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 47.80<br>0      | 46.84<br>0       | 47.271         | 0.431          | 4.1               | 0.488                     | 0.000                    | 2.0                | 1.908                       | Surcharged |
| Existing Watercourse | FSR: 100 years:<br>+40 %: 15 mins:<br>Summer | 48.00<br>0      | 46.70<br>0       | 46.726         | 0.026          | 2.0               | 0.000                     | 0.000                    | 2.0                | 1.880                       | OK         |

|                                                                            |  |                                                                          |                   |                    |
|----------------------------------------------------------------------------|--|--------------------------------------------------------------------------|-------------------|--------------------|
| 64120:<br>Observer Park, Reading<br>Drainage Calculations<br>Set 2         |  | Date:<br>06/06/0025                                                      |                   |                    |
|                                                                            |  | Designed by:<br>HW                                                       | Checked by:<br>GF | Approved By:<br>HP |
| Report Details:<br>Type: Stormwater Controls Summary<br>Storm Phase: Phase |  | PRP UK LTD:<br>Catherine House, Brixworth<br>NN6 9BX<br>Northamptonshire |                   |                    |





**FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By:  
Max. Avg. Depth**

| Stormwater Control | Storm Event                             | Max. US Level (m) | Max. DS Level (m) | Max. US Depth (m) | Max. DS Depth (m) | Max. Inflow (L/s) | Max. Residant Volume (m³) | Max. Flooded Volume (m³) | Total Lost Volume (m³) | Max. Outflow (L/s) | Total Discharge Volume (m³) | Percentage Available (%) | Status |
|--------------------|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|--------------------------|------------------------|--------------------|-----------------------------|--------------------------|--------|
| Swale              | FSR: 100 years: +40 %: 240 mins: Winter | 47.452            | 47.452            | 0.410             | 0.612             | 19.7              | 90.024                    | 0.000                    | 0.000                  | 2.0                | 46.661                      | 47.096                   | OK     |

**APPENDIX VII**

**MAINTENANCE AND MANAGEMENT PLAN**

**MANAGEMENT AND MAINTENANCE SCHEDULE  
FOR  
SURFACE WATER DRAINAGE**

Project No: **64120 – Observer Park, Reading**

For: Tungsten Dev Co 4 Limited

Date: June 2025

Prepared by: PRP  
Catherine House  
Old Harborough Road  
Brixworth  
Northampton  
NN6 9BX

| Type of Structure                                 | Maintenance Schedule   | Required Action                                                                                                                               | Typical Frequency                                          | Party Responsible for Maintenance |
|---------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------|
| <b>Gutters and Rodding Eyes</b>                   | Regular maintenance    | Inspect all gutters for sediment and debris and remove as necessary to prevent it from entering the surface water system                      | Annually                                                   |                                   |
| <b>Channel Drains, Gullies and Inlet Kerbs</b>    | Regular maintenance    | Inspect manholes, gullies and inlet kerbs. Remove any silt or debris from base and ensure that they are clean.                                | Six monthly                                                |                                   |
|                                                   |                        | Jet pipework to remove debris/silt                                                                                                            | As required                                                |                                   |
| <b>Inspection chambers manholes and catchpits</b> | Regular maintenance    | Inspect catchpits & inspection chambers and note rate of sediment accumulation                                                                | Quarterly during first 12 months and then annually onwards |                                   |
|                                                   |                        | Clear catchpits & inspection chamber of any sediment & litter (including leaf litter) accumulation and jet pipework to remove debris and silt | Quarterly / as required                                    |                                   |
| <b>Flow control</b>                               | Monitoring             | Inspect and identify any areas that are not operating correctly. If required, take remedial action                                            | Monthly during autumn and winter                           |                                   |
|                                                   | Occasional maintenance | Inspect and identify any areas that are not operating correctly. If required, take remedial action                                            | Quarterly                                                  |                                   |
|                                                   |                        | Remove sediment build-up from pre-treatment structures                                                                                        | Quarterly                                                  |                                   |
|                                                   | Regular maintenance    | Regular inspection to be carried out in accordance with manufacturer's instructions                                                           | As required                                                |                                   |
|                                                   | Remedial action        | Filter blocks to be removed and replaced in the event they fail                                                                               | As required                                                |                                   |

|                                                        |                        |                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                       |  |
|--------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Permeable paving surfacing<br/>(Hard Surfacing)</b> | Monitoring             | Inspect silt accumulation silt and debris rates on the surface to establish appropriate brushing of surface and replacing aggregate between block pavements as required. | Quarterly                                                                                                                                                                                                                                                                                                             |  |
|                                                        |                        | Inspect evidence of ponding or poor operation and / or weed growth - remedial action to be completed as required.                                                        | Quarterly                                                                                                                                                                                                                                                                                                             |  |
|                                                        | Occasional maintenance | Removal of weed or management using glyphosate applied directly into the weeds by an applicator rather than spraying                                                     | As required                                                                                                                                                                                                                                                                                                           |  |
|                                                        | Regular maintenance    | Brushing and vacuuming (Standard cosmetic sweep over whole surface)                                                                                                      | Annually - After autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturers recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect most sediment |  |
|                                                        | Remedial action        | Rehabilitation of surface and upper substructure by remedial sweeping.                                                                                                   | Every 10 to 15 years or as required (if infiltration performance is reduced                                                                                                                                                                                                                                           |  |

|                                        |                                                                                         |                                                                                                                                                                                                    |                                     |  |
|----------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--|
|                                        |                                                                                         |                                                                                                                                                                                                    | due to significant clogging)        |  |
| <b>Cellular Attenuation/Soakaway</b>   | Monitoring                                                                              | Survey inside of tank for sediment build-up and remove as necessary                                                                                                                                | Every 5 years or as required        |  |
|                                        |                                                                                         | Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.                                                                        | Annually                            |  |
|                                        | Occasional maintenance                                                                  | Repair/rehabilitate inlets, outlets, overflows and vents.                                                                                                                                          | As required                         |  |
|                                        |                                                                                         | Remove sediment from road gullies and catchpit chambers                                                                                                                                            | Annually or as required             |  |
|                                        | Regular maintenance                                                                     | Remove debris from catchment surface                                                                                                                                                               | Monthly                             |  |
|                                        |                                                                                         | Inspect and identify any areas that are not operating correctly. If required, take remedial action                                                                                                 | Monthly for 3 months, then annually |  |
| <b>General</b>                         | Monitoring                                                                              | The entire drainage system should be visually inspected during and after heavy rainfall, any flood levels and rise to expected flooding may be a warning sign that the drainage system is failing. | During and after heavy rainfall     |  |
| <b>Bypass/Full Retention Separator</b> | All as per Rain-Water Harvesting Tank Manufacturers Operation and maintenance guidance. |                                                                                                                                                                                                    |                                     |  |

|              |                        |                                                                                                                                                                                         |                                      |  |
|--------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--|
| <b>Swale</b> | Monitoring             | Inspect and documents presence of wildlife.                                                                                                                                             | As required.                         |  |
|              |                        | Check for poor vegetation growth, prune and trim dying shrubs.                                                                                                                          | Six Monthly                          |  |
|              |                        | Inspect/check all inlets, outlets and overflows to ensure that they are in good condition and operating as designed.                                                                    | Monthly                              |  |
|              | Occasional Maintenance | Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions, where required                                                                                    | Annually or as required              |  |
|              |                        | Remove nuisance and invasive vegetation                                                                                                                                                 | Annually or as required              |  |
|              |                        | Re-mulch re-turf and level to repair erosion.                                                                                                                                           | Six monthly                          |  |
|              |                        | Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface where required (typically every 60 month period) | As required or after heavy rainfall  |  |
|              |                        | Mow grasses (where required) and remove resultant clippings (during growing season only)                                                                                                | As required or after heavy rainfall  |  |
|              | Regular maintenance    | Remove litter debris from catchment surface                                                                                                                                             | Monthly                              |  |
|              |                        | Remove nuisance and invasive vegetation (for 12 months following installation)                                                                                                          | Monthly for 1 year, then six monthly |  |
|              |                        | Mow grasses (where required) and remove resultant clippings (during growing season only)                                                                                                | Monthly                              |  |
| <b>Pond</b>  | Occasional Maintenance | Reseed areas of poor vegetation growth                                                                                                                                                  | As required                          |  |
|              |                        | Prune and trim any trees and remove cuttings                                                                                                                                            | Every 2 years, or as required        |  |

|  |                     |                                                                                                           |                                                       |  |
|--|---------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--|
|  |                     | Remove sediment from inlets, outlets, forebay and main basin when required                                | Every 5 years, or as required                         |  |
|  |                     | Tidy all dead growth before start of growing season                                                       | Annually                                              |  |
|  |                     | Remove sediment from inlets, outlets.                                                                     | Annually or as required                               |  |
|  |                     | Manage wetland plants in outlet pools - where provided                                                    | Annually                                              |  |
|  |                     | Inspect bankside, structures, pipework etc for evidence of physical damage                                | Annually                                              |  |
|  | Regular maintenance | Remove litter and debris                                                                                  | Monthly                                               |  |
|  |                     | Cut grass - for spillways and access routes                                                               | Monthly (during growing season), or as required.      |  |
|  |                     | Cut grass - mow grass in and around basin/pond                                                            | Monthly                                               |  |
|  |                     | Manage other vegetation and remove nuisance plants                                                        | Monthly at start, then as required                    |  |
|  |                     | Inspect inlets, outlets and overflows for blockages, and clear if required                                | Monthly                                               |  |
|  |                     | Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies | Monthly for first year, then annually or as required. |  |
|  | Remedial action     | Repair erosion or other damage by reseedling and re-turfing                                               | As required                                           |  |
|  |                     | Repair/rehabilitation of inlets, outlets and overflows                                                    | As required                                           |  |
|  |                     | Realignment of erosion protection system                                                                  | As required                                           |  |
|  |                     | Relevel uneven surfaces and reinstate design levels                                                       | As required                                           |  |

**APPENDIX VIII**

**BYPASS SEPARATOR OPERATION AND MAINTENANCE GUIDANCE**

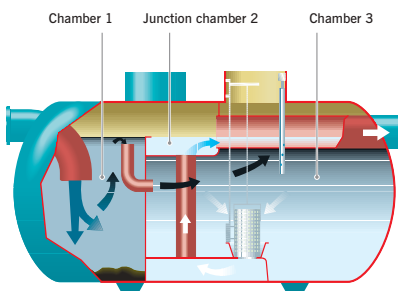
## 3.22 SPEL Stormceptor® By-Pass Separators

### Maintenance

The SPEL Stormceptor® by-pass separator is a well proven high quality factory made unit, designed and tested in accordance with the European Standard BS EN 858-1 and meets the requirements of the Environment Agency and the Construction Products Regulations.

SPEL Stormceptors® are designed for long term performance and with SPEL high volume coalescer units, low maintenance.

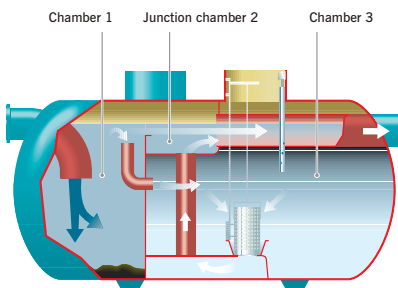
SPEL Stormceptor® by-pass separators are manufactured in class 1 and class 2 models and with or without silt capacity in accordance with BS EN 858-1. The range of models is listed in section 4 or on the SPEL Stormceptor® selection chart – available on request.



### Flows according to nominal size (NSB)

The polluted surface water first enters the primary chamber where silt settles out and is retained. The fuel, oil and other pollutants lighter than water, rise to the surface and are efficiently skimmed off and transferred to the separation chamber.

In normal conditions all the flow is through the separation chamber, where the quiescent conditions allow the pollutants to separate out efficiently. Water from the cleanest zone in the separation chamber flows through a coalescer unit, to remove smaller globules of oil, up to the junction chamber and thence to the outlet.



### Storm flows above NSB

During a storm the level in the primary chamber rises and the stormwater passes over the weir into the junction chamber and to the outlet.

The design keeps the turbulence within the separation chamber to a minimum which avoids disturbing the contaminants retained.

### Maintenance requirements

The SPEL automatic alarm/monitoring system will automatically warn you when the SPEL Stormceptor® requires emptying of light liquids, however, silt will accumulate and require removing at intervals depending on the site conditions.

We recommend the SPEL Stormceptor® is checked at 3, 6, or 12 monthly intervals to determine the depth of silt in the primary chamber.

Where a SPEL automatic alarm/monitoring system is not fitted, the SPEL Stormceptor® should be checked at 3, 6, 12 monthly intervals, depending upon site conditions, to determine the depth of retained pollutants. When the depth of light liquids retained has reached the predetermined design level in accordance with the European Standard BS EN 858-1, or if excessive silt has accumulated, it should be emptied.

When emptying ensure both chambers (primary - chamber 1 and separation - chamber 3) are emptied equally to prevent unequal pressure on the internal partition.

#### Chamber 1

The inlet connects directly into chamber 1 - the primary chamber where silt etc. is deposited and light liquids are skimmed off to be transferred to the main separation chamber, chamber 3.

Maintenance requires the removal of accumulated silt etc., checking the skim pipe is not blocked and removing floating debris.

#### Chamber 2

This is the junction chamber where the clean water passing out of the main separation chamber and the storm flow over the weir from the primary chamber meet and pass to the outlet. This chamber is an approved sampling point if samples are required for analysis. As it is mainly clean water passing through the chamber, maintenance is confined to checking the weir plate is free of debris.

#### Chamber 3

The main separation chamber is where the light liquids are retained and in the case of class 1 Stormceptors®, where the coalescer units are incorporated.

If coalescer units are incorporated, these should be removed and cleaned in accordance with the requirements set out in Data Sheet ref. 3.23 steps 1 to 5.

Retained light liquids should be removed from the top and any sediment from the bottom. Small Stormceptor® by-pass separators generally need to be completely emptied.

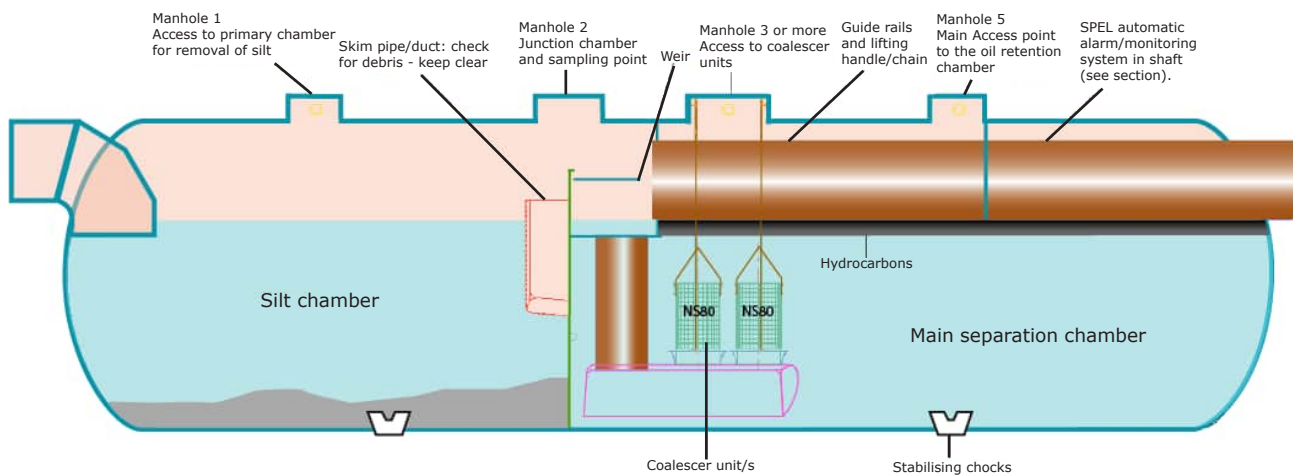
### SPEL automatic alarm/monitoring system

If a SPEL automatic alarm/monitoring system is fitted this will automatically signal when the Stormceptor® requires light liquids to be removed. If this system is fitted see 3.10 – 3.19.

When emptying take care not to damage or shift the probe protection tube situated in the access shaft of chamber 3.

## Maintenance Access

### SPEL Stormceptor® class 1 by-pass separators 400, 500 & 600 Series



A wide range of SPEL Stormceptor® class 1 by-pass separators is available incorporating coalescer unit/s for small to large catchment areas.

When emptying ensure both chambers (primary – chamber 1 and separation – chamber 3) are emptied equally to prevent unequal pressure on the internal partition.

#### Manhole access 1

This is the access to the primary chamber for removal of silt, the inspection of the skim pipe and clearing of any floating debris.

#### Manhole access 2

This provides access to the junction chamber which is suitable as a sampling point for the final discharge.

#### Manhole access 3 & 4 (larger models)

These provide access for the inspection, the removal and reinsertion of the coalescer units and the removal of hydrocarbons and silt.

The SPEL automatic alarm/monitoring system probe is generally situated at the base of this access shaft (see section on alarms).

## 3.24 SPEL Puraceptor® Class 1 Separators

### Maintenance

#### SPEL Puraceptor® class 1 separators

The SPEL Puraceptor® class 1 separator is available in single chamber or two chamber models.

#### Single chamber models (Figure 1)

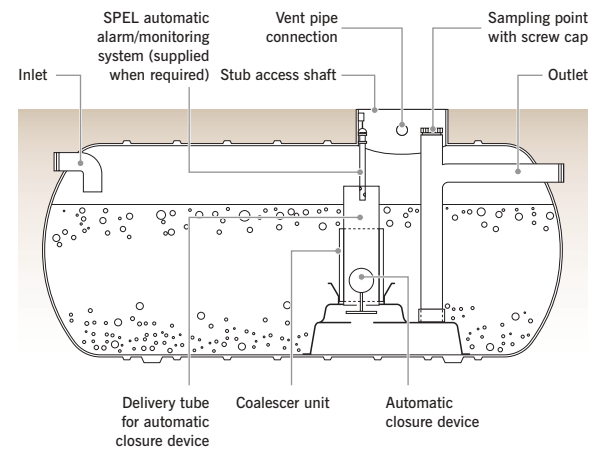
Two chamber models (Figure 2)

These incorporate a coalescer unit and an automatic closure device type 'R'. For maintenance see 3.20.

#### Two chamber models (Figure 2)

The maintenance procedure for the SPEL Puraceptor® class 1 two chamber models is detailed on sheet 3.20.

Figure 1



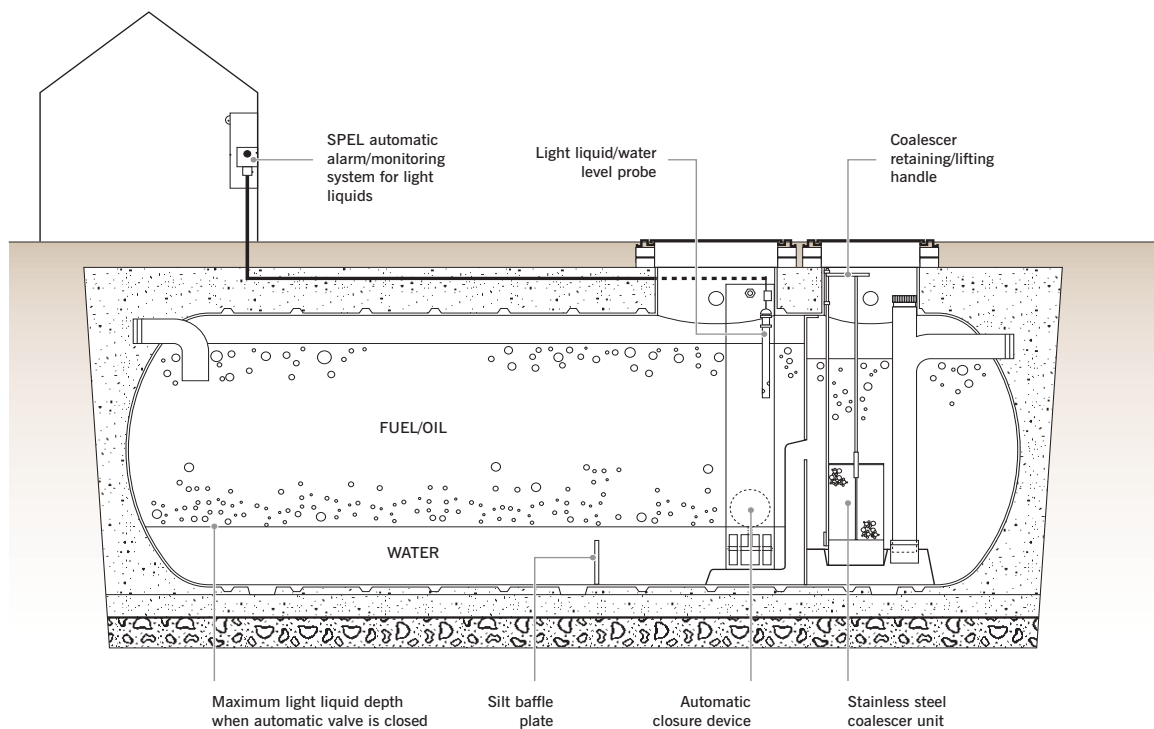
### Maintenance requirements

The SPEL automatic alarm/monitoring system will automatically warn you when the SPEL Separator requires emptying of light liquids. See ref. 3.10 – 3.19. However, silt will accumulate and require removing at intervals depending on the site conditions.

We recommend the SPEL Separator is checked at 3, 6 or 12 monthly intervals to determine the depth of silt in the primary chamber.

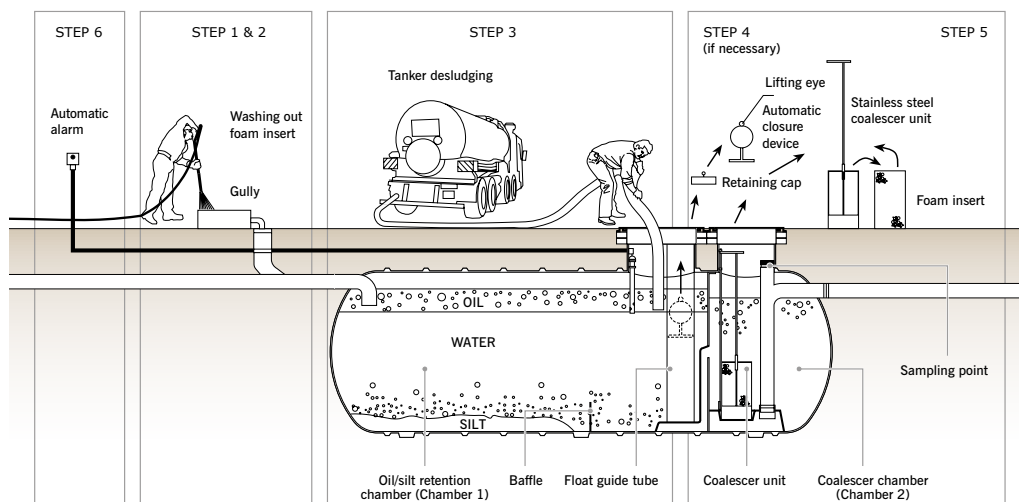
Separators must be provided with a remote device to provide visual and audible warning when the level of oil reaches 90 per cent of the oil storage volume (V) under static liquid level conditions. This automatic warning device indicates that the separator is in need of immediate emptying for it to continue to work effectively.

Figure 2



## Maintenance

SPEL Puraceptor® separator - two chamber model



### Step 1: Coalescer unit

Use the lifting handle or unclip the retaining clip for the wire rope and lift the coalescer unit out of the tank and place ahead of the Puraceptor®.

### Step 2: Cleaning foam insert

Remove foam insert and wash with normal water pressure ensuring the dirty water runs into the Puraceptor®.

### Step 3: Sucking out oil/fuel and silt

Suck off the retained oil from both chambers of the Puraceptor® and then the silt deposited on the bottom, leaving sufficient water to ensure the ACD remains floating.

### Step 4: Sucking out complete contents (if necessary)

If the quantity of pollutants exceeds recommended levels, the complete contents of the Puraceptor® may need to be removed.

After sucking out completely, remove the ACD in the ACD retaining tube by first removing the retaining cap (this is to safeguard against the removal of the float by unauthorised persons).

Then, by means of a pole with a hook, lift out the ACD using the lifting eye on the float. Check the seating at the base of the retaining tube is free of debris/silt that could prevent the ACD closing off in an emergency.

### Step 5: Re-insert coalescer unit and ACD

Re-insert the foam insert into the stainless steel coalescer unit and re-insert the coalescer unit into the Puraceptor®. Re-clip the wire rope or location pin as provided with the SPEL lifting/locating/locking system (see 3.7).

Partially fill the Puraceptor® with clean water to ensure the ACD when re-inserted remains floating. Check the ACD is not damaged and the closure plate is clean. Re-insert the ACD.

Finally check the ACD is floating and the retaining cap has been replaced to safeguard against its removal by unauthorised persons, unless depth of tank precludes doing so from ground level.

### ACD closes off in emergency due to oil spill

If the ACD closes off, the oil/fuel spill needs to be removed by a suction tanker. With a single chamber model, the complete contents will need to be removed in order to release the ACD. With the two chamber models, insert the suction hose into the first chamber (oil/silt retention chamber) and then the head in the second chamber will normally provide a back pressure and automatically release the ACD.

**Precaution:** never try to pull the ACD off its seating by force.

### Step 6: SPEL automatic alarm /monitoring system

The SPEL automatic alarm/monitoring system probe should be lifted out of the probe protection tube, wiped clean and re-inserted. The system should now be reset according to instructions. See 3.10 – 3.19.

### Maintenance procedure

The SPEL automatic alarm/monitoring system will automatically warn you when the Puraceptor® requires emptying. See 3.10 – 3.19. Where a SPEL automatic alarm/monitoring system is not fitted, SPEL Puraceptors® should be checked at three, six or twelve-monthly intervals depending on site conditions, to determine the depth of retained pollutants and silt in both chambers and the correct operating of the ACD (automatic closure device). When the depth of the oil/fuel retained has reached the predetermined design level, in accordance with BS EN 858-1, it should be emptied.

**Important Note:** When emptying, ensure both chambers are emptied equally starting with the oil retention chamber and then the coalescer chamber and back again until empty.

**APPENDIX IX**

**SURFACE WATER QUALITY ASSESSMENT**

| SUMMARY TABLE                         |                                                                                                       | DESIGN CONDITIONS                                                                                                                                                                                                                               |   |   |   |
|---------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|
|                                       |                                                                                                       | 1                                                                                                                                                                                                                                               | 2 | 3 | 4 |
| Land Use Type                         | Non-residential parking with infrequent change (e.g. schools, offices, < 300 traffic movements a day) |                                                                                                                                                                                                                                                 |   |   |   |
| Pollution Hazard Level                | Low                                                                                                   |                                                                                                                                                                                                                                                 |   |   |   |
| Pollution Hazard Indices              |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| TSS                                   | 0.5                                                                                                   |                                                                                                                                                                                                                                                 |   |   |   |
| Metals                                | 0.4                                                                                                   |                                                                                                                                                                                                                                                 |   |   |   |
| Hydrocarbons                          | 0.4                                                                                                   |                                                                                                                                                                                                                                                 |   |   |   |
| SuDS components proposed              |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| Component 1                           | Pervious pavement (where the pavement is not designed as an infiltration component)                   | SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B |   |   |   |
| Component 2                           | Pond or wetland                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| Component 3                           | None                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| SuDS Pollution Mitigation Indices     |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| TSS                                   | >0.95                                                                                                 |                                                                                                                                                                                                                                                 |   |   |   |
| Metals                                | 0.95                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| Hydrocarbons                          | 0.95                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| Groundwater protection type           | None                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| Groundwater protection                |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| Pollution Mitigation Indices          |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| TSS                                   | 0                                                                                                     |                                                                                                                                                                                                                                                 |   |   |   |
| Metals                                | 0                                                                                                     |                                                                                                                                                                                                                                                 |   |   |   |
| Hydrocarbons                          | 0                                                                                                     |                                                                                                                                                                                                                                                 |   |   |   |
| Combined Pollution Mitigation Indices |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| TSS                                   | >0.95                                                                                                 |                                                                                                                                                                                                                                                 |   |   |   |
| Metals                                | 0.95                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| Hydrocarbons                          | 0.95                                                                                                  |                                                                                                                                                                                                                                                 |   |   |   |
| Acceptability of Pollution Mitigation |                                                                                                       |                                                                                                                                                                                                                                                 |   |   |   |
| TSS                                   | Sufficient                                                                                            |                                                                                                                                                                                                                                                 |   |   |   |
| Metals                                | Sufficient                                                                                            |                                                                                                                                                                                                                                                 |   |   |   |
| Hydrocarbons                          | Sufficient                                                                                            |                                                                                                                                                                                                                                                 |   |   |   |

| SUMMARY TABLE                         |                                                                                                  | DESIGN CONDITIONS                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|---------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                                       |                                                                                                  | 1                                                                                                                                                                                                                                                                                                     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 | 4 |
| Land Use Type                         | Low traffic roads (e.g. residential roads and general access roads, < 300 traffic movements/day) |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Level                | Low                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Indices              |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.4                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.4                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS components proposed              |                                                                                                  | SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B                                                       | Ponds/wetlands should be preceded by an upstream component(s) that trap(s) silt, or designed specifically to retain sediment in a separate zone, easily accessible for maintenance, such that the sediment will not be re-suspended in subsequent events                                                                                                                                                                                                  |   |   |
| Component 1                           | Pond or wetland                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 2                           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 3                           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS Pollution Mitigation Indices     |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.7                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.7                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection type           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection                |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Mitigation Indices          |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Combined Pollution Mitigation Indices |                                                                                                  | <b>Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.</b> | Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England |   |   |
| TSS                                   | 0.7                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.7                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Acceptability of Pollution Mitigation |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |

| SUMMARY TABLE                         |                                                                                                  | DESIGN CONDITIONS                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|---------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                                       |                                                                                                  | 1                                                                                                                                                                                                                                                                                                     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 | 4 |
| Land Use Type                         | Low traffic roads (e.g. residential roads and general access roads, < 300 traffic movements/day) |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Level                | Low                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Indices              |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.4                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.4                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS components proposed              |                                                                                                  | SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 1                           | Swale                                                                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 2                           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 3                           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS Pollution Mitigation Indices     |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.6                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.6                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection type           | None                                                                                             |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection                |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Mitigation                  |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Indices                               |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0                                                                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Combined Pollution Mitigation Indices |                                                                                                  | <b>Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.</b> | Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England |   |   |
| TSS                                   | 0.5                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.6                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.6                                                                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Acceptability of Pollution Mitigation |                                                                                                  |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | Sufficient                                                                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |

| SUMMARY TABLE                         |                                                | DESIGN CONDITIONS                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|---------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                                       |                                                | 1                                                                                                                                                                                                                                                                                                     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 | 4 |
| Land Use Type                         | Commercial/Industrial roofing: Inert materials |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Level                | Very low                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Indices              |                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.3                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.2                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.05                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS components proposed              |                                                | SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B                                                       | Ponds/wetlands should be preceded by an upstream component(s) that trap(s) silt, or designed specifically to retain sediment in a separate zone, easily accessible for maintenance, such that the sediment will not be re-suspended in subsequent events                                                                                                                                                                                                  |   |   |
| Component 1                           | Pond or wetland                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 2                           | None                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 3                           | None                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS Pollution Mitigation Indices     |                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.7                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.7                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.5                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection type           | None                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection                |                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Mitigation Indices          |                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0                                              |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Combined Pollution Mitigation Indices |                                                | <b>Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.</b> | Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England |   |   |
| TSS                                   | 0.7                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.7                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.5                                            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Acceptability of Pollution Mitigation |                                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | Sufficient                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | Sufficient                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | Sufficient                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |

| SUMMARY TABLE                         |                                           | DESIGN CONDITIONS                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|---------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                                       |                                           | 1                                                                                                                                                                                                                                                                                                     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 | 4 |
| Land Use Type                         | Standard commercial yard or delivery area | This classification is not appropriate for haulage yards, lorry parks, waste management areas, or chemical storage/handling zones                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Level                | Medium                                    |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Hazard Indices              |                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0.7                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0.6                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.7                                       |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS components proposed              |                                           | SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B                                                       | Ponds/wetlands should be preceded by an upstream component(s) that trap(s) silt, or designed specifically to retain sediment in a separate zone, easily accessible for maintenance, such that the sediment will not be re-suspended in subsequent events                                                                                                                                                                                                  |   |   |
| Component 1                           | Pond or wetland                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 2                           | SPEL Stormceptor Bypass Separator         |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Component 3                           | None                                      |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| SuDS Pollution Mitigation Indices     |                                           | Detailed assessment of performance of designed component in reducing inflow concentrations of each pollutant type required as evidence of adopted indices. Enter indices approved by the environmental regulator in appropriate 'User Defined Indices' row below                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | >0.95                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | >0.95                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.95                                      |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection type           | None                                      |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Groundwater protection                |                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Pollution Mitigation Indices          |                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | 0                                         |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | 0                                         |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0                                         |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Combined Pollution Mitigation Indices |                                           | <p>Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.</p> | Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England |   |   |
| TSS                                   | >0.95                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | >0.95                                     |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | 0.95                                      |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Acceptability of Pollution Mitigation |                                           |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| TSS                                   | Sufficient                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Metals                                | Sufficient                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Hydrocarbons                          | Sufficient                                |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |

**APPENDIX X****GENERAL CONDITIONS**

1. This report has been prepared and written specifically for the Client named in the introduction and is exclusively for his/her/their benefit. No reliance may be placed on the contents of this report by any third party except with the express agreement of the original Client and the written agreement of PRP. Such a written agreement may require the payment of an additional fee.
2. This report has been prepared and written in the context of the proposals for the development of the site as stated by the client and will not be valid in a different context. Furthermore, new information, improved practices, or legislation may necessitate alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of this report, it should be referred to us for re-assessment.
3. Factual reports received from third parties are included or summarised in this report. They have been used in the best faith and the context of the site and the proposals. We cannot be held responsible for any shortcomings in these third-party reports in any way whatsoever.
4. There may also be special conditions appertaining to the site which were not revealed by the investigation, and which will not, therefore, have been considered in this report. Any assessments may be subject to amendment in the light of additional information becoming available.
5. Whilst an opinion may be expressed or implied in this report on possible configurations or the possible presence of features based on either visual, verbal or published evidence, this is for guidance only and no liability can be accepted for the accuracy of such opinions.
6. Comments on groundwater conditions will have been based on observations made only at the time of any investigation or published data unless otherwise stated. It should be noted, however, that groundwater levels vary due to seasonal and other effects.
7. This report is not a site categorisation, and hazards could occur which have not been detected.
8. The copyright in this report and other related plans and documents prepared by PRP is owned by them and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of the report may however be made and distributed by the client as an expedient in dealing with matters related to its commission.