| Earl<br>Consultin<br>tart date:<br>nd date:    | 13/12,<br>13/12 | /2023<br>/2023               | Geologists  Dri  Log | Partne iller: DM, gged by: SW the logged: 13/1 | ntal Scie | entists         | Project N Clive F Site Loca Cardif Client: Project N 8711 | Road<br>ution:<br>f |   | Drilling CP Equipm Ground Easting Northin  | l Level:  |  |   |            | \                    | ٧S                             | 502                | 1                     |
|--|-----------------|------------------------------|----------------------|--|-----------|-----------------|---|---------------------|---|--|---|--|---|------------|----------------------|--------------------------------|--------------------|-----------------------|
| Depth  | Sai             | mple                         |                      | Test Details                                   |           | TCR             | Water   | Casing              |   |  | Strata  | a Details  |   | 1          | Water                |                                | Depth              | Backfill/<br>Install- |
| рерии  | Туре            | Class                        | Type                 | Result   |           | (%)             | Depth   | Depth               |   |  | escription  |  |   | Legend     | Strikes/<br>Standing | Depth<br>(Thicknes             | mOE                | ations                |
| 0.25<br>0.30 - 0.4<br>0.50 - 0.5<br>0.60 - 1.0 | 59 D<br>00 B    | SOIL<br>SOIL<br>SOIL<br>SOIL | SPT                  | 38 (6,6/9,7,1                                  | 10,12)    |                 |   |                     | Firm to s<br>gravelly,<br>fine to co<br>medium<br>fragmen<br>throught<br>surface k<br>Soft to fi<br>sandy CL<br>Gravel is<br>and ango<br>DEPOSIT<br>Very stiff<br>coarse, g<br>dark grev<br>(GLACIO | slightly parse. Gand corts. Black out. Ro ooundarm, bro AY. Sand dark grular. (GIS), light gravelly y, fine to | sandy<br>fravel is<br>nsists o<br>c speck<br>otlets p<br>ry. (MA<br>wn, gra<br>d is find<br>ey, me<br>LACIOF<br>rey / br<br>SAND. | CLAY. So fine to so fine to fi | and is  s seen at  DUND)  lightly arse. c coarse . SHEET  ine to is light / I angular |            |                      | (0.30<br>0.30<br>(0.25<br>0.55 | 10.70              | ***                   |
| 2.00 - 3.0                                     | 00 B            | SOIL                         | SPT                  | 28 (4,6/8,5,                                   | ,8,7)     |                 |   | 2.45                | 1.9 to 3n   | n: Hole col  | llapse.   |  |   |            |                      | (2.45                          | -                  |                       |
|  |                 |                              | SPT                  | 45<br>(9,14/12,11,:                            | 10,12)    |                 |   | 3.45                |   | End of B   | orehole at  | 3.000m   |   |            |                      | 3.00                           | -<br>-<br>8.00     |                       |
|  |                 |                              | SPT                  | 50 (11,15/5<br>220mm                           |           |                 |   | 3.95                |   |  |   |  |   |            |                      |                                |                    |                       |
| rogress &                                      |                 |                              |                      | Water Str                                      |           | Strike          | Casing  | Elapsed             | Depth to  | Depth  | Chisell<br>Depth  | ing<br>Depth   |   |            | Diamete              |                                | Casing C           |                       |
| Date   | Time Hol        |                              |                      | ater Date                                      | Time      | Strike<br>Depth | Casing<br>Depth   |                     | Depth to<br>Water   | Depth<br>Sealed  | Depth<br>Top  | Depth<br>Base  | Duration  | Hole Depth | Hole Dia             | meter                          | Casing<br>Diameter | Casing Depth          |

- 1. Co-ordinates and ground levels of investigation points obtained by a Handheld GPS.
- Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
   Groundwater not encountered.
   50mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 0.5 and 1.9m.

|   | nsulting Engineers   Geologists   Environmental Scientists |                      |                 |                |                        |            | Site Location: Cardiff Client: |                 |                 | Equipment  |   |  |   |  | WS02       |  |                            |  |                |                                 |  |
|---|--|----------------------|-----------------|----------------|------------------------|------------|--------------------------------|-----------------|-----------------|--|---|--|---|--|------------|--|----------------------------|--|----------------|---------------------------------|--|
| tart date:  |  | 2/2023               |                 | Drille         | ,                      | Lewis      |                                | Cilent.         |                 |  |   | l Level:   | 11.00   |  |            | •                                      | V                          |  |                | -                               |  |
| nd date:  |  | 2/2023               |                 |                | ed by: SW              | 2 /2 2 2 2 |                                | Project I       | No:             |  | Easting   |  | 3159  |  |            |  |                            |  |                |                                 |  |
| ackfill date                                      |  | 2/2023<br>ample      | _               |                | logged: 13/1           |            |                                | 8711            |                 |  | Northir   |  | 1767  | 10 m   |            | Water                                  |                            | Dept   |                | D. 1-611/                       |  |
| Depth   |  | Class                | Тур             |                | Result                 |            | TCR<br>(%)                     | Water<br>Depth  | Casing<br>Depth |  |   | escription   | on  |  | Legend     | Ctribos/                               | Der<br>(Thick              | oth  | mOD            | Backfill/<br>Install-<br>ations |  |
| 0.20<br>0.29 - 0.30<br>0.30 - 0.60<br>0.70 - 0.80 | D D  | SOIL<br>SOIL<br>SOIL |                 |                |                        |            |                                |                 |                 | Firm, dar slightly sa coarse. Geonsisting spots present a GROUND Stiff, dark GLACIOF Very stiff, CLAY. San | andy Cl<br>Gravel is<br>g of bri-<br>esent th<br>at surfa-<br>o)<br>k browr<br>LUVIAL<br>, dark b | AY. Sar<br>s fine to<br>ck frag<br>nrougho<br>ce bou<br>n CLAY.<br>SHEET<br>prown, | nd is find<br>o mediuments.<br>out. Roundary.<br>(Possib<br>DEPOS | le to jum, Black otlets (MADE                        |            |  | (0.2<br>0.2<br>(0.0<br>0.3 | 22  <br>08 )=<br>30  <br>-                     | 10.78<br>10.70 |                                 |  |
| 1.00 - 2.00                                       | О В  | SOIL                 | . SPP           |                | 37<br>(9,14/10,8,9     | ),10)      |                                |                 | 1.45            | grey, fine<br>Pockets of<br>(GLACIOF<br>Very stiff,<br>slightly of<br>grey, fine<br>(GLACIOF               | of coars<br>LUVIAI<br>, grey /<br>layey, g  | se sand<br>L SHEET<br>browr<br>ravelly<br>dium a                                   | through TDEPO<br>The fine the SAND.<br>The sub-                   | shout.<br>SITS)<br>o coarse<br>Gravel is<br>angular. | s 🔯 📑      |  | 1.0                        | -<br>-<br>-<br>-<br>-<br>-                     | 10.00          |                                 |  |
| 2.00 - 3.00                                       | O B  | SOIL                 | . SP            | т з            | 34 (10,10/9,7          | 7,9,9)     |                                |                 | 2.45            |  |   |  |   |  |            | 5리 중리 중리 소리 | (2.0                       | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                |                                 |  |
|   |  |                      | SP              | т              | 38 (7,7/8,9,1          | 0,11)      |                                |                 | 3.45            |  | End of B  | Borehole at  | 3.000m  |  |            |  | 3.0                        | 780—<br>—<br>—                                 | 8.00           |                                 |  |
|   |  |                      | SP              | т              | 48 (12,12/48<br>255mm) |            |                                |                 | 3.95            |  |   |  |   |  |            |  |                            | -  |                |                                 |  |
| rogress & :                                       | Standing   | Water                | Levels          |                | Water Stri             | kes        |                                |                 |                 |  |   | Chisell  | ing   |  | Hole       | <u> </u>                               | r                          | Ca   | sing Di        | ameter                          |  |
|   |  | ole Depth            | Casing<br>Depth | Water<br>Depth | r Date                 | Time       | Strike<br>Depth                | Casing<br>Depth |                 | Depth to<br>Water  | Depth<br>Sealed   | Depth<br>Top   | Depth<br>Base   | Duration   | Hole Depth |  |                            | Casi<br>Diam                                   | ing ,          | Casing Depth                    |  |
|   |  |                      | septil          | pehtu          |                        |            | Берип                          | Беріп           | windres         | vvacel   | scareu  | юр   | שמצ   |  |            |  |                            | Jidiffi  |                |                                 |  |

Drilling method

- Co-ordinates and ground levels of investigation points obtained by a Handheld GPS.
   Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
   Groundwater not encountered.
   Upon completion boreholes backfilled with arising/bentonite.

| Consulting I               | ulting Engineers   Geologists   Environmental Scientists  ate: 13/12/2023 |               |           |                                |             |                 | Site Loca         | Ground Level: 11.00 mOD |  |                      |                         |                    |                       | WS03   |                         |                     |                  |                                 |  |  |
|----------------------------|---|---------------|-----------|--------------------------------|-------------|-----------------|-------------------|-------------------------|--|----------------------|-------------------------|--------------------|-----------------------|--|-------------------------|---------------------|------------------|---------------------------------|--|--|
| nd date:<br>ackfill date:  |   |               |           | gged by: SW<br>te logged: 13/1 | .2/2023     |                 | Project N<br>8711 | lo:                     |  | Easting:<br>Northin  |                         | 1767               |                       |  |                         |                     |                  |                                 |  |  |
| Depth                      |   | nple<br>Class | Туре      | Test Details  Result           |             |                 | Water<br>Depth    | Casing<br>Depth         |  | De                   | Strata<br>scriptio      | Details<br>On      |                       | Legend   | Water Strikes/ Standing | Depth<br>(Thickness | Depth<br>is) mOD | Backfill/<br>Install-<br>ations |  |  |
| 0.35                       | ES  | SOIL          |           |                                |             |                 |                   |                         | Firm to so<br>CLAY. Sar<br>fine to m<br>of brick f   | ıd is fine<br>edium, | e to coa<br>angula      | arse. G<br>r and c | ravel is<br>consists  |  |                         | (0.50               | )                |                                 |  |  |
| 0.50 - 0.60<br>0.60 - 1.00 | D<br>B  | SOIL          |           |                                |             |                 |                   |                         | Stiff, brov<br>grey, rou<br>grained.                 | nded to              | sub-ro                  | ounded             | and fine              |  |                         | 0.50                | 10.50            |                                 |  |  |
|                            |   |               |           |                                |             |                 |                   |                         | DEPOSITS   |                      |                         |                    |                       |  |                         | (0.50               | )                |                                 |  |  |
| 1.00 - 2.00                | В   | SOIL          | SPT       | 27 (6,6/6,9,                   | 6,6)        |                 |                   |                         | Very stiff,<br>slightly cl<br>grey, fine<br>(GLACIOF | ayey, gr<br>to med   | avelly<br>lium ar       | SAND.<br>nd sub-   | Gravel is<br>angular. | , ×  | <u> </u>                | 1.00                |                  |                                 |  |  |
| 2.00 - 3.00                | В   | SOIL          | SPT       | 36 (8,9/9,8,1                  |             |                 |                   | 2.45                    |  |                      |                         |                    |                       |  |                         | (1.90               | -                |                                 |  |  |
|                            |   |               | SPT       | 50 (11,12/50<br>255mm)         |             |                 |                   | 3.35                    |  |                      | orehole at              |                    |                       | The state of the s |                         | 2.90                | -                |                                 |  |  |
| rogress & Sta              |   |               | Casing Wa | Water Stri                     | kes<br>Time | Strike<br>Depth | Casing<br>Depth   | Elapsed<br>Minutes      | Depth to<br>Water                                    | Depth<br>Sealed      | Chisell<br>Depth<br>Top | Depth<br>Base      | Duration              | Hole Depth   | Diametei<br>Hole Dia    | matar               | Casing Diameter  | ameter Casing Depth             |  |  |
|                            |   |               | Бериі Бе  | put                            |             | νεμιπ           | Бери              | ivillutes               | vvalet   | Sedied               | юþ                      | nase               |                       |  |                         |                     | o.ametel         |                                 |  |  |

Project Name:

Drilling method

- 1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.
- 2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
- 3. Groundwater not encountered.
- 4. 50mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 0.5 and 2.9m/ Upon completion boreholes backfilled with arising/bentonite.

| Start date:   13/12/2023   Driller:   DM, Lewis   Logged by:   SW   Project No:   Backfill date:   13/12/2023   Date logged:   13/12/2023   Date logged:   13/12/2023   Date logged:   13/12/2023   Date logged:   13/12/2023   B711   Northing:   176722 m  | Water   Depth   Backfill/ Installations     (0.20 )  |
|--|--|
| Depth   Sample   Test Details   TCR   Water   Casing   Depth   Description   Legence   | d Strikes/ Depth (Thickness) mOD Installations  (0.20)- 0.20 - 10.80 (0.10)- 0.30 (0.20)-  |
| Type Class Type Result (%) Depth Depth Description Legence  Soft, dark brown, slightly sandy CLAY. Sand is fine to coarse. Rootlets and grass present throughtout. (MADE GROUND)   | Color   Chickness   Chicknes |
| Sand is fine to coarse. Rootlets and grass present throughtout. (MADE GROUND)  | 0.20 - 10.80<br>(0.10)<br>0.30<br>(0.20)   |
| Grey, sub-angular COBBLE. (MADE GROUND)  Zone of minimal recovery. Assumed to how Dody brown CLAY (MADE  |  |
| GROUND). Stiff, brown, gravelly, slightly sandy  |  |
| 0.80 - 0.90 D SOIL CLAY. Sand is fine to coarse. Gravel is dark grey, medium to coarse and angular and crystalline.  (GLACIOFLUVIAL SHEET DEPOSITS)  |  |
| 1.50 - 1.60 D SOIL   | (1.10)   |
| 1.60 - 2.00 B SOIL  Very stiff, grey / brown, fine to coarse, slightly clayey, gravelly SAND. Gravel is grey, fine to medium and sub-angular. (GLACIOFLUVIAL SHEET DEPOSITS)  SPT 50 (10,18/50 for 2.45  | 1.60 - 9.40  |
| 265mm)  End of Borehole at 2.450m  | 2.45   |
|  |  |
|  | 3—   |
|  |  |
|  |  |
|  |  |
| Progress & Standing Water Levels Water Strikes Chiselling Hole   | Diameter Casing Diameter   |
| Date Time Hole Depth Casing Depth Depth Date Time Strike Depth Dep | Casing   |

Project Name:

Drilling method

- 1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.
- Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
   Groundwater not encountered.
   50mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 0.5 and 2m.

#### Clive Road Earth Science Partnership Site Location: Consulting Engineers | Geologists | Environmental Scientists Equipment **WS05** Cardiff 13/12/2023 Driller: DM, Lewis Ground Level: 11.00 mOD Start date: End date: SW 13/12/2023 Easting: 316019 m Logged by: Project No: Backfill date: 13/12/2023 13/12/2023 Date logged: 176717 m Northing: Test Details Sample Strata Details Water Backfill/ Depth TCR Water Casing Depth Install-Strikes Depth (Thickness mOD Class Result (%) Depth Depth Type Type Description Legend ations Reddish brown, fine to coarse, gravelly (0.20)-SAND. Gravel is fine and angular. (MADE GROUND) 0.20 10.80 Soft, dark brown, slightly gravelly, 0.30 - 0.50 SOIL slightly sandy CLAY. Sand is fine to ES coarse. Gravel is fine grained, angular (0.50) and comprises of brick fragments. 0.50 - 0.70 В SOIL Black speckly spots present. (MADE 0.50 - 0.70 ES SOIL GROUND) 0.70 10.30 Stiff, brown, slightly gravelly, slightly 0.80 - 1.00 В SOIL sandy CLAY. Sand is fine to coarse. (0.30)0.80 - 1.00 SOIL D Gravel is fine grained, angular and dark grey. Black speckly spots present. SPT 13 (1,2/3,4,3,3) 10.00 1.00 (MADE GROUND) Stiff, brown, gravelly, slightly sandy CLAY. Sand is fine to coarse. Gravel is $(0.45)^{-}$ dark grey, medium to coarse and SOIL angular. (GLACIOFLUVIAL SHEET 1.30 - 1.40 D DEPOSITS) 1.45 9.55 Very stiff, grey / brown, fine to coarse, slightly clayey, gravelly SAND. Gravel is 1.60 - 2.50 SOIL В grey, fine to medium and sub-angular. (GLACIOFLUVIAL SHEET DEPOSITS) (1.05) 2.45 SPT 43 (10,9/8,11,13,11) SPT 50 (11,12/50 for 2.95 2.50 8.50 End of Borehole at 2.500m 255mm) Progress & Standing Water Levels Water Strikes Chiselling Hole Diameter Casing Diameter Water Strike Casing Elapsed Depth to Depth Depth Depth Casing Date Time Hole Depth Date Time Duration Hole Depth Hole Diamete Casing Depth Depth Water

Project Name:

Drilling method

- 1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.
- 2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
- 3. Groundwater was not encountered.
- 4. Upon completion boreholes backfilled with arising/bentonite.