



**Earth Environmental  
& Geotechnical Ltd**

Tel / Fax: 0161 2824518  
 Web: [www.earthenvironmental.co.uk](http://www.earthenvironmental.co.uk)  
 Email: [adam@earthenvironmental.co.uk](mailto:adam@earthenvironmental.co.uk)

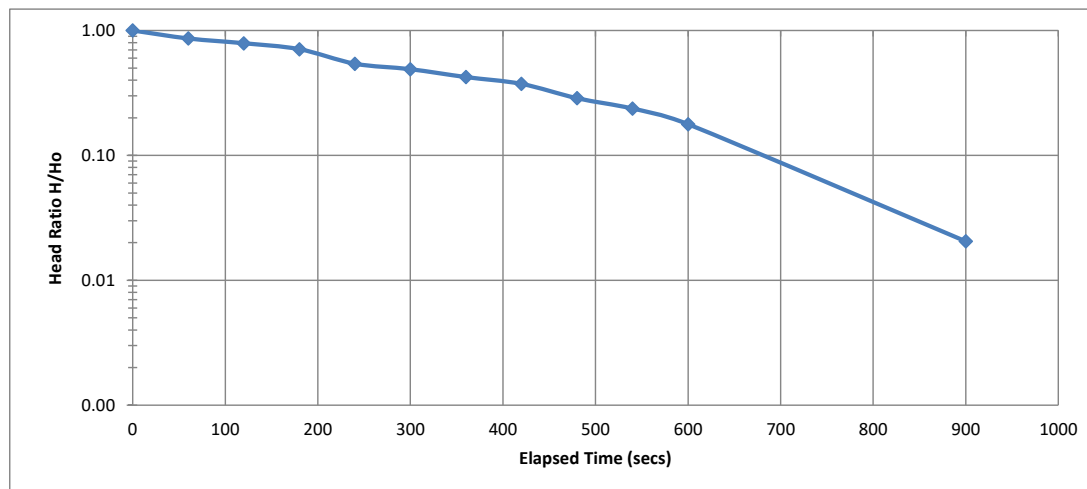
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS1           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.44          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.44          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.44          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.05          | metres |
| Depth to water at end of test below casing level                     | 4.35          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 420.00        | sec    |
| Coefficient of Permeability                                          | 4.21E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.05                                   | 4.39 | 1.00  |
| 60                  | 0.65                                   | 3.79 | 0.86  |
| 120                 | 0.97                                   | 3.47 | 0.79  |
| 180                 | 1.33                                   | 3.11 | 0.71  |
| 240                 | 2.06                                   | 2.38 | 0.54  |
| 300                 | 2.29                                   | 2.15 | 0.49  |
| 360                 | 2.58                                   | 1.86 | 0.42  |
| 420                 | 2.80                                   | 1.64 | 0.37  |
| 480                 | 3.18                                   | 1.26 | 0.29  |
| 540                 | 3.40                                   | 1.04 | 0.24  |
| 600                 | 3.66                                   | 0.78 | 0.18  |
| 900                 | 4.35                                   | 0.09 | 0.02  |





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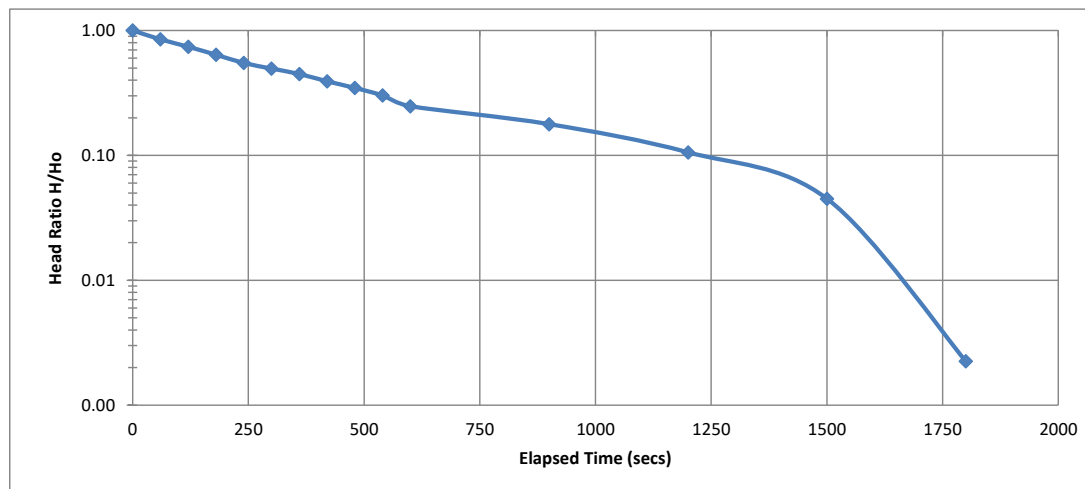
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

Job No: A5255  
Site: 23 Ringley Road, Whitefield  
Client: BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS1           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.44          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.44          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.44          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.43          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 450.00        | sec    |
| Coefficient of Permeability                                          | 3.93E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.44 | 1.00  |
| 60                  | 0.67                                   | 3.77 | 0.85  |
| 120                 | 1.15                                   | 3.29 | 0.74  |
| 180                 | 1.60                                   | 2.84 | 0.64  |
| 240                 | 2.00                                   | 2.44 | 0.55  |
| 300                 | 2.24                                   | 2.20 | 0.50  |
| 360                 | 2.45                                   | 1.99 | 0.45  |
| 420                 | 2.70                                   | 1.74 | 0.39  |
| 480                 | 2.90                                   | 1.54 | 0.35  |
| 540                 | 3.10                                   | 1.34 | 0.30  |
| 600                 | 3.34                                   | 1.10 | 0.25  |
| 900                 | 3.65                                   | 0.79 | 0.18  |
| 1200                | 3.97                                   | 0.47 | 0.11  |
| 1500                | 4.24                                   | 0.20 | 0.05  |
| 1800                | 4.43                                   | 0.01 | 0.00  |





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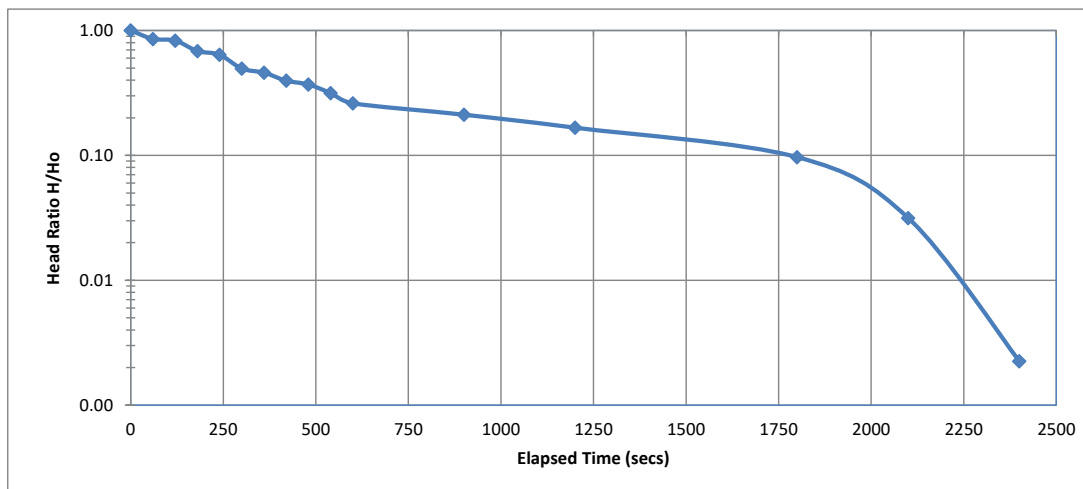
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS1           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.44          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.44          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.44          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.43          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 480.00        | sec    |
| Coefficient of Permeability                                          | 3.69E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.44 | 1.00  |
| 60                  | 0.64                                   | 3.80 | 0.86  |
| 120                 | 0.75                                   | 3.69 | 0.83  |
| 180                 | 1.40                                   | 3.04 | 0.68  |
| 240                 | 1.60                                   | 2.84 | 0.64  |
| 300                 | 2.24                                   | 2.20 | 0.50  |
| 360                 | 2.40                                   | 2.04 | 0.46  |
| 420                 | 2.68                                   | 1.76 | 0.40  |
| 480                 | 2.80                                   | 1.64 | 0.37  |
| 540                 | 3.04                                   | 1.40 | 0.32  |
| 600                 | 3.28                                   | 1.16 | 0.26  |
| 900                 | 3.50                                   | 0.94 | 0.21  |
| 1200                | 3.70                                   | 0.74 | 0.17  |
| 1800                | 4.01                                   | 0.43 | 0.10  |
| 2100                | 4.30                                   | 0.14 | 0.03  |
| 2400                | 4.43                                   | 0.01 | 0.00  |





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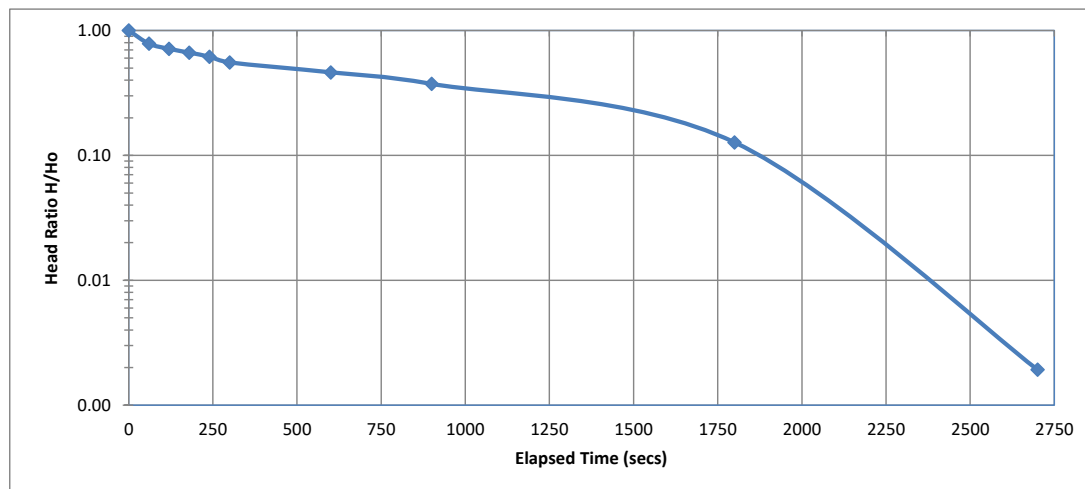
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS2           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 5.20          | metres |
| Depth to Standing Water Level (or base of well)                      | 5.20          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 5.20          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.01          | metres |
| Depth to water at end of test below casing level                     | 5.19          | metres |
| Response zone length                                                 | 1.00          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.33          |        |
| Basic Time Lag at H/Ho =0.37                                         | 900.00        | sec    |
| Coefficient of Permeability                                          | 2.12E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.01                                   | 5.19 | 1.00  |
| 60                  | 1.13                                   | 4.07 | 0.78  |
| 120                 | 1.50                                   | 3.70 | 0.71  |
| 180                 | 1.75                                   | 3.45 | 0.66  |
| 240                 | 2.00                                   | 3.20 | 0.62  |
| 300                 | 2.32                                   | 2.88 | 0.55  |
| 600                 | 2.80                                   | 2.40 | 0.46  |
| 900                 | 3.26                                   | 1.94 | 0.37  |
| 1800                | 4.54                                   | 0.66 | 0.13  |
| 2700                | 5.19                                   | 0.01 | 0.00  |





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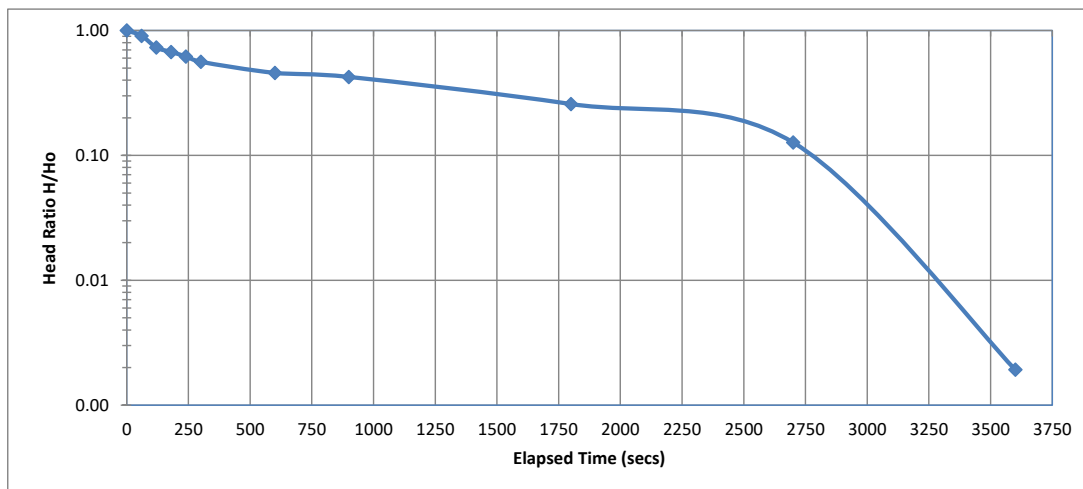
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS2           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 5.20          | metres |
| Depth to Standing Water Level (or base of well)                      | 5.20          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 5.20          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 5.19          | metres |
| Response zone length                                                 | 1.00          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.33          |        |
| Basic Time Lag at H/Ho =0.37                                         | 1100.00       | sec    |
| Coefficient of Permeability                                          | 1.73E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 5.20 | 1.00  |
| 60                  | 0.48                                   | 4.72 | 0.91  |
| 120                 | 1.40                                   | 3.80 | 0.73  |
| 180                 | 1.70                                   | 3.50 | 0.67  |
| 240                 | 1.98                                   | 3.22 | 0.62  |
| 300                 | 2.28                                   | 2.92 | 0.56  |
| 600                 | 2.82                                   | 2.38 | 0.46  |
| 900                 | 2.99                                   | 2.21 | 0.43  |
| 1800                | 3.86                                   | 1.34 | 0.26  |
| 2700                | 4.54                                   | 0.66 | 0.13  |
| 3600                | 5.19                                   | 0.01 | 0.00  |





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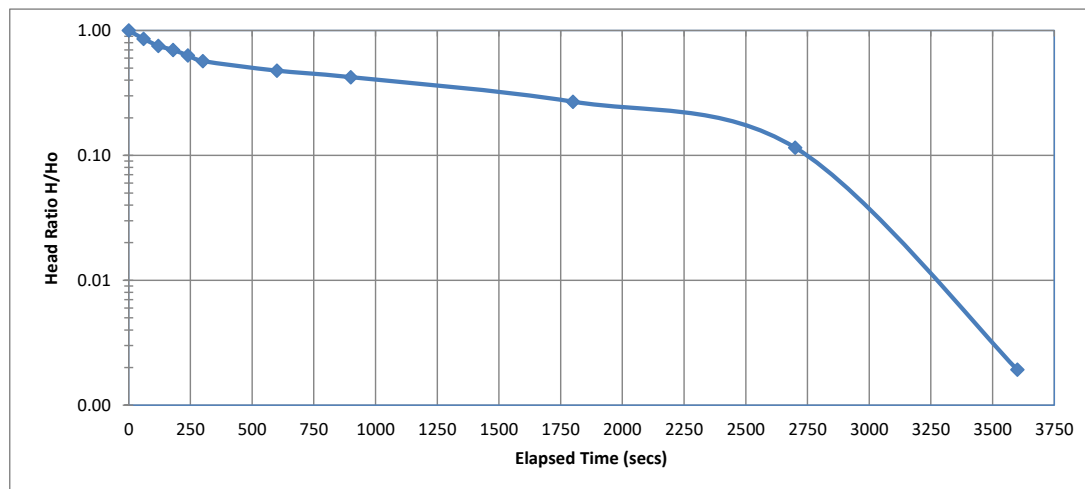
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(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS2           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 5.20          | metres |
| Depth to Standing Water Level (or base of well)                      | 5.20          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 5.20          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 5.19          | metres |
| Response zone length                                                 | 1.00          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.33          |        |
| Basic Time Lag at H/Ho =0.37                                         | 1200.00       | sec    |
| Coefficient of Permeability                                          | 1.59E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 5.20 | 1.00  |
| 60                  | 0.74                                   | 4.46 | 0.86  |
| 120                 | 1.28                                   | 3.92 | 0.75  |
| 180                 | 1.57                                   | 3.63 | 0.70  |
| 240                 | 1.92                                   | 3.28 | 0.63  |
| 300                 | 2.24                                   | 2.96 | 0.57  |
| 600                 | 2.72                                   | 2.48 | 0.48  |
| 900                 | 3.00                                   | 2.20 | 0.42  |
| 1800                | 3.80                                   | 1.40 | 0.27  |
| 2700                | 4.60                                   | 0.60 | 0.12  |
| 3600                | 5.19                                   | 0.01 | 0.00  |





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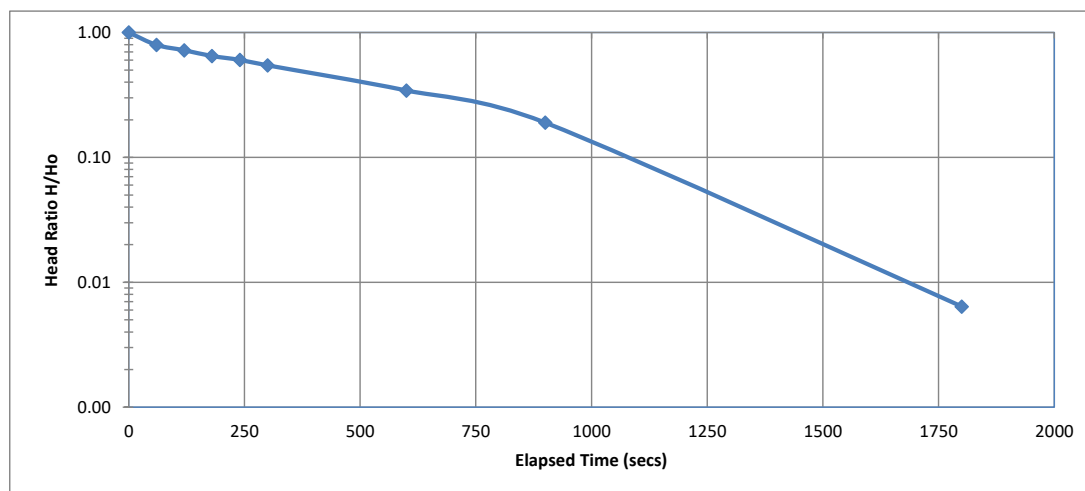
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

Job No: A5255  
Site: 23 Ringley Road, Whitefield  
Client: BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS3           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.73          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.73          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.73          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.04          | metres |
| Depth to water at end of test below casing level                     | 4.70          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at $H/H_0 = 0.37$                                     | 550.00        | sec    |
| Coefficient of Permeability                                          | 3.22E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/h0 |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.04                                   | 4.69 | 1.00  |
| 60                  | 1.00                                   | 3.73 | 0.80  |
| 120                 | 1.35                                   | 3.38 | 0.72  |
| 180                 | 1.69                                   | 3.04 | 0.65  |
| 240                 | 1.90                                   | 2.83 | 0.60  |
| 300                 | 2.17                                   | 2.56 | 0.55  |
| 600                 | 3.12                                   | 1.61 | 0.34  |
| 900                 | 3.84                                   | 0.89 | 0.19  |
| 1800                | 4.70                                   | 0.03 | 0.01  |





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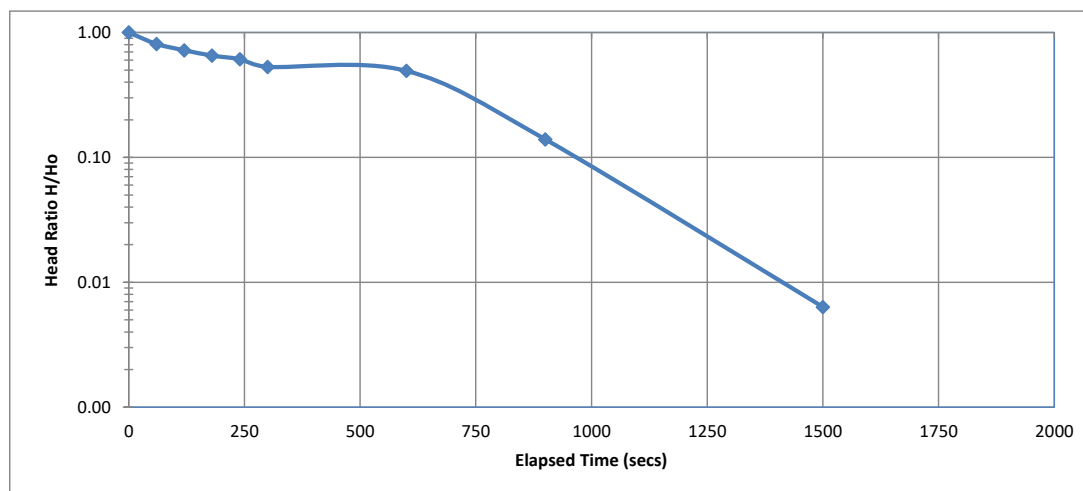
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS3           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.73          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.73          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.73          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.70          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at $H/H_0 = 0.37$                                     | 700.00        | sec    |
| Coefficient of Permeability                                          | 2.53E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/h0 |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.73 | 1.00  |
| 60                  | 0.90                                   | 3.83 | 0.81  |
| 120                 | 1.32                                   | 3.41 | 0.72  |
| 180                 | 1.64                                   | 3.09 | 0.65  |
| 240                 | 1.84                                   | 2.89 | 0.61  |
| 300                 | 2.22                                   | 2.51 | 0.53  |
| 600                 | 2.40                                   | 2.33 | 0.49  |
| 900                 | 4.07                                   | 0.66 | 0.14  |
| 1500                | 4.70                                   | 0.03 | 0.01  |





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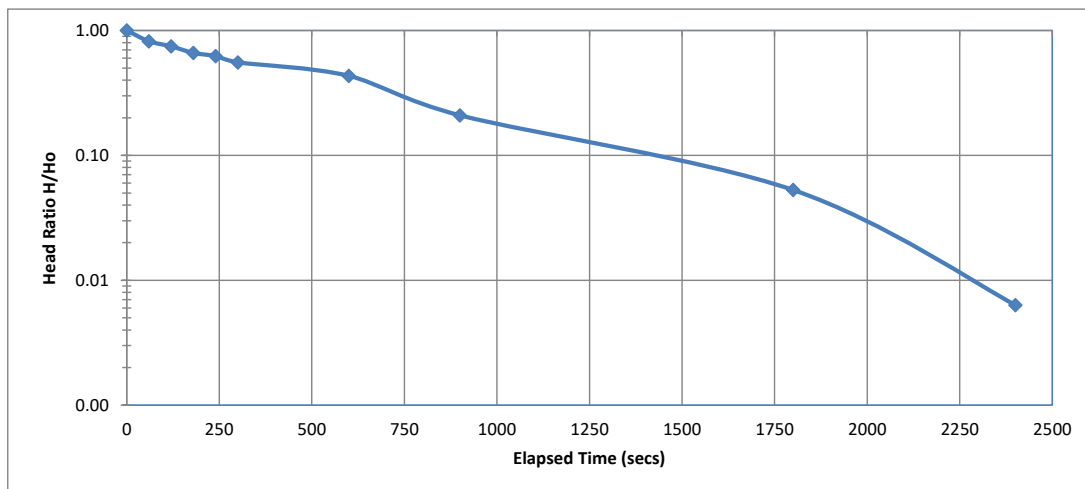
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

Job No: A5255  
Site: 23 Ringley Road, Whitefield  
Client: BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS3           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.73          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.73          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.73          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.70          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 650.00        | sec    |
| Coefficient of Permeability                                          | 2.72E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.73 | 1.00  |
| 60                  | 0.85                                   | 3.88 | 0.82  |
| 120                 | 1.20                                   | 3.53 | 0.75  |
| 180                 | 1.60                                   | 3.13 | 0.66  |
| 240                 | 1.78                                   | 2.95 | 0.62  |
| 300                 | 2.10                                   | 2.63 | 0.56  |
| 600                 | 2.68                                   | 2.05 | 0.43  |
| 900                 | 3.74                                   | 0.99 | 0.21  |
| 1800                | 4.48                                   | 0.25 | 0.05  |
| 2400                | 4.70                                   | 0.03 | 0.01  |





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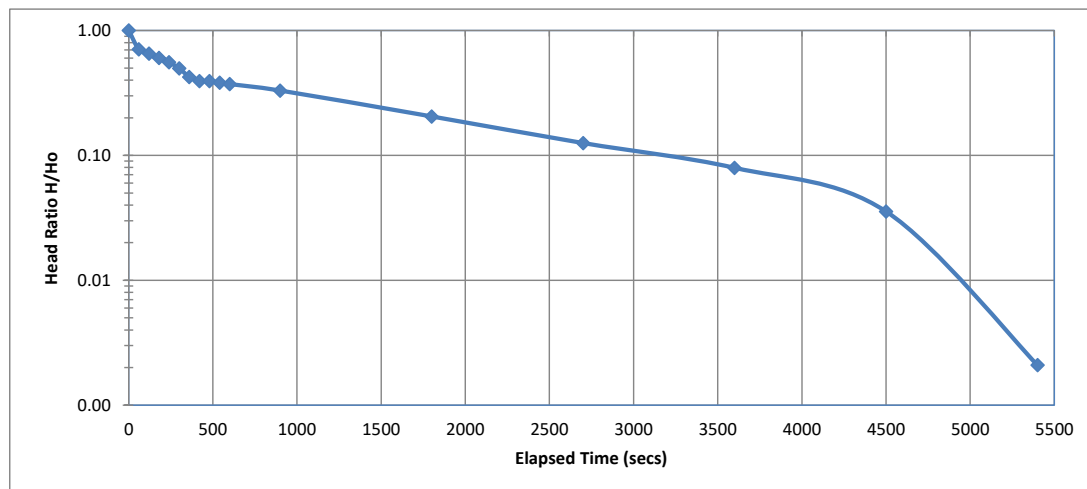
## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

**Job No:** A5255  
**Site:** 23 Ringley Road, Whitefield  
**Client:** BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS4           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.78          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.78          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.78          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.77          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 550.00        | sec    |
| Coefficient of Permeability                                          | 3.22E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.78 | 1.00  |
| 60                  | 1.40                                   | 3.38 | 0.71  |
| 120                 | 1.66                                   | 3.12 | 0.65  |
| 180                 | 1.90                                   | 2.88 | 0.60  |
| 240                 | 2.12                                   | 2.66 | 0.56  |
| 300                 | 2.40                                   | 2.38 | 0.50  |
| 360                 | 2.75                                   | 2.03 | 0.42  |
| 420                 | 2.90                                   | 1.88 | 0.39  |
| 480                 | 2.90                                   | 1.88 | 0.39  |
| 540                 | 2.95                                   | 1.83 | 0.38  |
| 600                 | 3.00                                   | 1.78 | 0.37  |
| 900                 | 3.20                                   | 1.58 | 0.33  |
| 1800                | 3.80                                   | 0.98 | 0.21  |
| 2700                | 4.18                                   | 0.60 | 0.13  |
| 3600                | 4.40                                   | 0.38 | 0.08  |
| 4500                | 4.61                                   | 0.17 | 0.04  |
| 5400                | 4.77                                   | 0.01 | 0.00  |





## Earth Environmental & Geotechnical Ltd

Tel / Fax: 0161 2824518  
Web: [www.earthenvironmental.co.uk](http://www.earthenvironmental.co.uk)  
Email: [adam@earthenvironmental.co.uk](mailto:adam@earthenvironmental.co.uk)

## FALLING HEAD TEST

(To: BS5930 :1999 Page 50)

Job No: A5255  
Site: 23 Ringley Road, Whitefield  
Client: BDI Structural Solutions

|                                                                      |               |        |
|----------------------------------------------------------------------|---------------|--------|
| Location Reference:                                                  | WS4           |        |
| Date                                                                 | 28 March 2023 |        |
| Geology in test section                                              | Sand          |        |
| Depth of test section                                                | 4.78          | metres |
| Depth to Standing Water Level (or base of well)                      | 4.78          | metres |
| Height of Casing                                                     | 0.00          | metres |
| Height of Casing above water level                                   | 4.78          | metres |
| Depth to water at start of test below casing level (or base of well) | 0.00          | metres |
| Depth to water at end of test below casing level                     | 4.77          | metres |
| Response zone length                                                 | 1.10          | metres |
| Standpipe diameter in test section                                   | 0.018         | metres |
| Cross sectional area of standpipe                                    | 2.55E-04      | metres |
| Intake Factor (BS5930 p50) Figure d                                  | 1.44          |        |
| Basic Time Lag at H/Ho =0.37                                         | 500.00        | sec    |
| Coefficient of Permeability                                          | 3.54E-07      | m/s    |

| Time Elapsed (secs) | Depth of water below top of casing (m) | h(m) | h1/ho |
|---------------------|----------------------------------------|------|-------|
| 0                   | 0.00                                   | 4.78 | 1.00  |
| 60                  | 1.20                                   | 3.58 | 0.75  |
| 120                 | 1.60                                   | 3.18 | 0.67  |
| 180                 | 1.88                                   | 2.90 | 0.61  |
| 240                 | 1.95                                   | 2.83 | 0.59  |
| 300                 | 2.30                                   | 2.48 | 0.52  |
| 360                 | 2.65                                   | 2.13 | 0.45  |
| 420                 | 2.88                                   | 1.90 | 0.40  |
| 480                 | 2.92                                   | 1.86 | 0.39  |
| 540                 | 3.04                                   | 1.74 | 0.36  |
| 600                 | 3.06                                   | 1.72 | 0.36  |
| 900                 | 3.26                                   | 1.52 | 0.32  |
| 1800                | 3.70                                   | 1.08 | 0.23  |
| 2700                | 3.94                                   | 0.84 | 0.18  |
| 3600                | 4.20                                   | 0.58 | 0.12  |
| 4500                | 4.45                                   | 0.33 | 0.07  |
| 5400                | 4.64                                   | 0.14 | 0.03  |
| 6300                | 4.77                                   | 0.01 | 0.00  |

