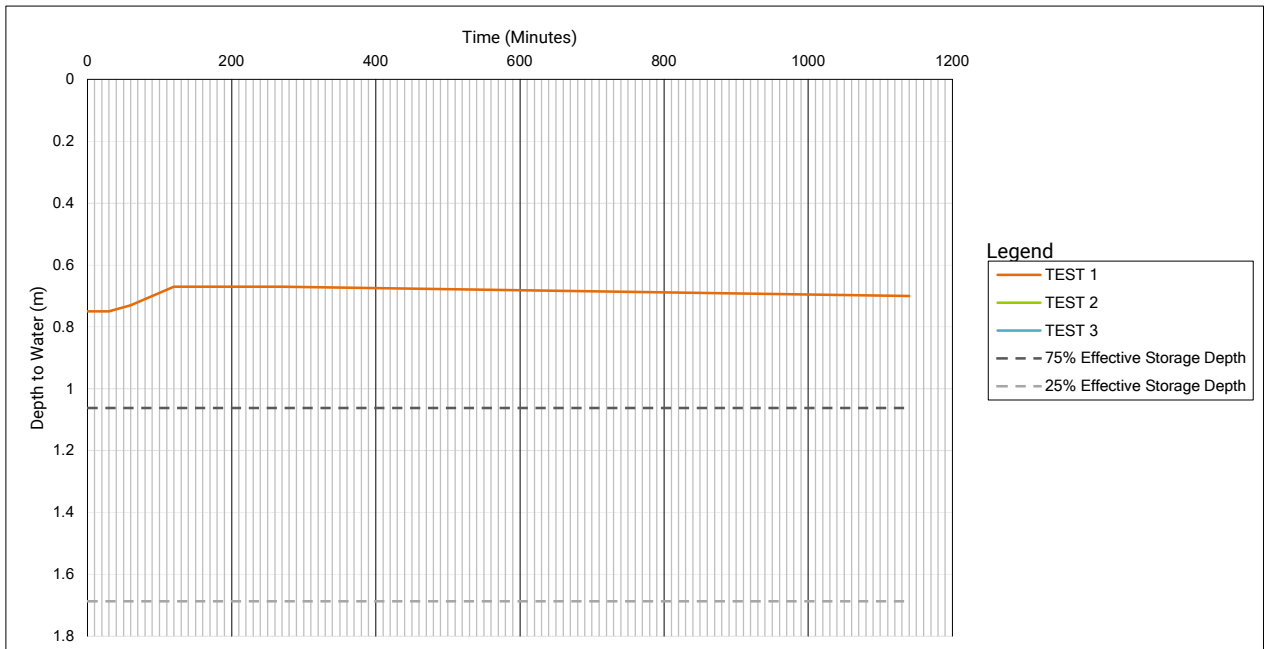


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                       |                    |               |                                                                                                                                             |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                |  | <b>Site:</b> Trub Farm<br><b>Job Number:</b> 17524<br><b>Date of Test:</b> 15/04/2024 |                    |               | <b>Trial Pit Number:</b> SA103<br><b>Length:</b> 2.40 m<br><b>Width:</b> 0.60 m<br><b>Depth:</b> 2.00 m<br><b>Groundwater Level:</b> 1.80 m |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Drafted                                                                               | Rev                | Auth          | <b>Proportion of Pit Volume Occupied by Gravel Solids (Pg)</b><br><br>0.00                                                                  |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 03/06/2024                                                                            | 1                  | MSD           |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                       |                    |               |                                                                                                                                             |                              |
| <b>Remarks</b><br><br>Effective Depth - For a standard test in which the pit is filled with water, the effective depth will be equal to the actual depth. If the pit is not completely filled, it will be equal to the depth at the start of each test.<br><br><b>Gravel Filled Pits</b> - Typically, the proportion of volume occupied by gravel is 0.70 (i.e. 70%), leaving 30% free storage volume. If the pit is left open (gravel is not used) then Pg = 0 |  | <b>TEST 1</b>                                                                         |                    | <b>TEST 2</b> |                                                                                                                                             | <b>TEST 3</b>                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Time(min)                                                                             | Depth to Water (m) | Time(min)     | Depth to Water (m)                                                                                                                          | Time(min) Depth to Water (m) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 0                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 1                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 2                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 3                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 4                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 5                                                                                     | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 10                                                                                    | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 20                                                                                    | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 30                                                                                    | 0.75               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 60                                                                                    | 0.73               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 120                                                                                   | 0.67               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 180                                                                                   | 0.67               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 270                                                                                   | 0.67               |               |                                                                                                                                             |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 1140                                                                                  | 0.70               |               |                                                                                                                                             |                              |
| Effective Storage Depth m 1.25<br>75% Effective Storage Depth m 0.94<br>(i.e. depth below GL) m 1.06<br>25% Effective Storage Depth m 0.31<br>(i.e. depth below GL) m 1.69<br>Effective Storage Depth 75%-25% m 0.63<br><br>Time to fall to 75% effective depth mins N/A<br>Time to fall to 25% effective depth mins N/A<br><br>Effective Volume of Pit - $V(75\%-25\%) \times (1 - P_g)$ m3 0.90<br>Area of Pit - ap50 (50%) m2 5.19<br>t (75%-25%) mins N/A   |  |                                                                                       |                    |               |                                                                                                                                             |                              |
| <b>SOIL INFILTRATION RATE</b> m/s                                                                                                                                                                                                                                                                                                                                                                                                                               |  | N/A                                                                                   |                    |               |                                                                                                                                             |                              |

**DESIGN SOIL INFILTRATION RATE, f :**

NA - Failed to reach 25% effective depth within 24 hours and therefore test terminated.



# APPENDIX XIV

## M-BAT ASSESSMENT



| INPUT DATA |          |            |            |                                                             |                                                             |                                                             |                                                             |     |     |     | RESULTS (Copper)                                          |      |                                                         |                             |                                                         | RESULTS (Zinc) |                                                       |                             |                                                              |      | RESULTS (Mn)                                               |                             |                                                           |      |                                                         | RESULTS (Ni)                |  |  |  |  |
|------------|----------|------------|------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-----|-----|-----|-----------------------------------------------------------|------|---------------------------------------------------------|-----------------------------|---------------------------------------------------------|----------------|-------------------------------------------------------|-----------------------------|--------------------------------------------------------------|------|------------------------------------------------------------|-----------------------------|-----------------------------------------------------------|------|---------------------------------------------------------|-----------------------------|--|--|--|--|
| ID         | Location | Waterbody  | Date       | Measured Cu Concentration (dissolved) (µg l <sup>-1</sup> ) | Measured Zn Concentration (dissolved) (µg l <sup>-1</sup> ) | Measured Mn Concentration (dissolved) (µg l <sup>-1</sup> ) | Measured Ni Concentration (dissolved) (µg l <sup>-1</sup> ) | pH  | DOC | Ca  | Site-specific PNEC Dissolved Copper (µg l <sup>-1</sup> ) | Biof | Bioavailable Copper Concentration (µg l <sup>-1</sup> ) | Risk Characterisation Ratio | Site-specific PNEC Dissolved Zinc (µg l <sup>-1</sup> ) | Biof           | Bioavailable Zinc Concentration (µg l <sup>-1</sup> ) | Risk Characterisation Ratio | Site-specific PNEC Dissolved Manganese (µg l <sup>-1</sup> ) | Biof | Bioavailable Manganese Concentration (µg l <sup>-1</sup> ) | Risk Characterisation Ratio | Site-specific PNEC Dissolved Nickel (µg l <sup>-1</sup> ) | Biof | Bioavailable Nickel Concentration (µg l <sup>-1</sup> ) | Risk Characterisation Ratio |  |  |  |  |
|            |          |            |            |                                                             |                                                             |                                                             |                                                             |     |     |     |                                                           |      |                                                         |                             |                                                         |                |                                                       |                             |                                                              |      |                                                            |                             |                                                           |      |                                                         |                             |  |  |  |  |
| 1          | East     | Trub Brook | 09/05/2024 | 4.3                                                         | 11                                                          | 5.2                                                         | 1.5                                                         | 7.7 | 5.1 | 8.2 | 20.48                                                     | 0.05 | 0.21                                                    | 0.21                        | 26.44                                                   | 0.41           | 4.53                                                  | 0.42                        | 217.05                                                       | 0.32 | 2.35                                                       | 0.03                        | 11.59                                                     | 0.35 | 0.32                                                    | 0.11                        |  |  |  |  |
| 2          | West     | Trub Brook | 09/05/2024 | 3.9                                                         | 15                                                          | 2.1                                                         | 0.96                                                        | 7.3 | 5.1 | 7.9 | 22.02                                                     | 0.05 | 0.18                                                    | 0.18                        | 24.42                                                   | 0.45           | 6.70                                                  | 0.61                        | 429.39                                                       | 0.29 | 0.60                                                       | 0.00                        | 13.17                                                     | 0.30 | 0.29                                                    | 0.07                        |  |  |  |  |

