

Engeny  
Level 2  
500 Queen Street  
Brisbane QLD 4000

25 February 2022

1384.21d

Attn: Ben Kiernan, Principal Environmental Engineer

## **Re: Roper Creek Diversion soil investigation (DRAFT in preparation)**

Dear Ben

This memorandum provides analytical data on soil samples provided by Engeny to Landloch from Roper Creek, Middlemount Coal Mine Queensland. Landloch understands that Engeny has been contracted to conduct the Geotechnical investigations for Roper Creek Diversion Stage 2. Landloch is to assess the quality of surface soil and waste materials from areas to be excavated to ensure successful rehabilitation.

This report provides details and findings of the assessment. The key findings are:

- Surface soil is generally non-saline and non-sodic;
- Surface soil fertility is low;
- Subsoils are dispersive
- Subsoils have some high alkaline
- Subsoils are non-saline

### **Scope of Work**

The proposed scope of works is as follows:

- Prepare a sampling plan
- Submit 55 samples to laboratory and organise analysis;
- Interpret Laboratory results;
- Compile brief report including amelioration advice; and
- Report reviewed by Certified Professional Soil Scientist

### **Samples taken**

Changes to Engeny's project scope resulted in an alteration to the original sampling plan, which is shown as Figure 1.

Fifteen of the original thirty-four test pit locations were ultimately sampled (Figure 2). From those locations, fifty-five soil samples were sent to Landloch for analysis.

[Insert Figures 1 and 2 here] – GIS not complete for draft

Landloch can only provide recommendations where data has been collected. The recommendations provided in this report will therefore reflect the number of sample sites sent to Landloch for analysis.

All samples delivered to Landloch's Toowoomba office were sent to EastWest Enviroag (Tamworth, NSW), a National Association of Testing Authorities (NATA) and Australia Soil and Plant Analysis Council (ASPAC) certified laboratory.

### Laboratory analysis

Laboratory analysis was conducted on samples from fourteen sites with twenty-four surface soils, nine subsoils and twenty-two samples below the subsoil selected for analysis.

Three analytic suites were used, a detailed surface soil analytical suite, a detailed subsoil suite and a basic screening analysis. Analytical suites are detailed in Table 1.

Table 1: Analytical suites and their corresponding soil analysis.

| Soil analysis                                        | Analytical suites |                  |           |
|------------------------------------------------------|-------------------|------------------|-----------|
|                                                      | Surface soils     | Detailed subsoil | Screening |
| pH (1:5 soil:water)                                  | ✓                 | ✓                | ✓         |
| Electrical conductivity (1:5 soil:water suspension)  | ✓                 | ✓                | ✓         |
| Chloride                                             | ✓                 | ✓                | -         |
| Total Kjeldahl nitrogen (TKN)                        | ✓                 | -                | -         |
| Available phosphorus and potassium (Colwell P and K) | ✓                 | -                | -         |
| Exchangeable cations (K, Ca, Mg, Na, Al)             | ✓                 | ✓                | -         |
| Effective cation exchange capacity                   | ✓                 | ✓                | -         |
| Exchangeable sodium percent (ESP)                    | ✓                 | ✓                | -         |
| Organic carbon                                       | ✓                 | -                | -         |
| Labile Sulphur                                       | ✓                 | -                | -         |
| Trace elements (Cu, Zn, Mn, Fe, B)                   | ✓                 | -                | -         |
| Emersons Aggregate Test (EAT)                        | -                 | ✓                | ✓         |

## Results

Laboratory results are presented with interpretation in Attachment B – Laboratory Results. Interpretation of analytical data used parameter values and ratings given in Bruce and Rayment (1982) and Hazelton and Murphy (2009). Table 2 presents key chemical analytical results.

### 1.1 Surface samples from 0 – 0.3 m depth

The surface 0.3 m of the soil profile was analysed using a full agronomic analysis suite, including major plant nutrients, trace elements and exchangeable cations. The following is a summary of the soil chemistry for the 0 – 0.3 m layer.

- pH generally close to neutral;
- Salinity and chloride levels are low;
- Total nitrogen is low at most sites;
- Available phosphorus is deficient, but concentrations of total P tend to be moderate to high;
- Organic carbon is deficient at some sites;
- Trace element boron is deficient or low at most sites; and
- Some samples are sodic (ESP >6%).

## **1.2 Subsoil, 0.3 – 1 m depth**

Soils from depths between 0.3 – 1 m were analysed using a less detailed analytical suite. The following is a summary of the soil chemistry in that depth range.

- pH ranges from moderately acidic to strongly alkaline
- Salinity ranges from low to moderate;
- Dispersive properties are moderate to high.

## **1.3 Subsoil, > 1 m depth**

Samples taken at depths greater than 1 m were analysed using a screening test suite. The following is a summary of the soil chemistry below 1 m.

- pH ranges from slightly acidic to strongly alkaline; and
- Salinity ranges from very low to moderate.

Table 2: Key soil profile chemistry.

| Analyte                                              | Units | Surface soil, 0 – 0.1 m |         |         | Subsoil, 0.3 – 1 m |         |         | Subsoil, > 1 m |         |         |
|------------------------------------------------------|-------|-------------------------|---------|---------|--------------------|---------|---------|----------------|---------|---------|
|                                                      |       | Minimum                 | Maximum | Average | Minimum            | Maximum | Average | Minimum        | Maximum | Average |
| pH (1:5, soil:water)                                 | -     | 5.19                    | 8.47    | 6.0     | 4.84               | 9.12    | 5.69    | 5.2            | 9.26    | 6.11    |
| Electrical conductivity (1:5, soil:water suspension) | dS/m  | 0.01                    | 0.4     | 0.13    | 0.02               | 0.78    | 0.22    | 0.02           | 1.58    | 0.57    |
| Chloride                                             | mg/kg | 20.2                    | 294     | 58.43   | 72.10              | 616     | 269     | -              | -       | -       |
| Total Kjeldahl Nitrogen (TKN)                        | mg/kg | 68.4                    | 3488    | 1321.23 | -                  | -       | -       | -              | -       | -       |
| Total phosphorus                                     |       | 144                     | 936.00  | 389.48  | -                  | -       | -       | -              | -       | -       |
| Available phosphorus (Colwell)                       | mg/kg | 2.4                     | 247     | 46.41   | -                  | -       | -       | -              | -       | -       |
| Available potassium (Colwell)                        | mg/kg | 83.4                    | 759     | 319.84  | -                  | -       | -       | -              | -       | -       |
| Sulphur (KCl extract)                                | mg/kg | 16.9                    | 79.9    | 33.12   | -                  | -       | -       | -              | -       | -       |
| Organic carbon                                       | %     | 0.26                    | 3.87    | 1.43    | -                  | -       | -       | -              | -       | -       |
| Copper                                               | mg/kg | 0.2                     | 1.58    | 0.54    | -                  | -       | -       | -              | -       | -       |
| Zinc                                                 | mg/kg | 0.47                    | 3.57    | 1.23    | -                  | -       | -       | -              | -       | -       |
| Boron                                                | mg/kg | 0.22                    | 1.0     | 0.56    | -                  | -       | -       | -              | -       | -       |
| Calcium Magnesium ration (Ca:Mg)                     | -     | 0.9:1                   | 10.7:1  | 3.3:1   | -                  | -       | -       | -              | -       | -       |
| Exchangeable sodium percentage (ESP)                 | %     | 0.96                    | 16.2    | 4.5     | 2.47               | 35.44   | 17.19   | -              | -       | -       |

Note: Yellow shaded cells indicate levels of concern; Red shaded cells indicate deficiencies.

## **Recommendations**

### **1.4 Surface soil stripping**

Recommended surface soil stripping depth is based on chemical properties presented in Section 3. These recommendations have been made to avoid problematic soil chemistry.

A surface soil stripping depth of 0.1 m is recommended for the area sampled. Soils below 0.1 m have high exchangeable sodium content and dispersive properties. Soils below 0.1 m will not be beneficial in stripping for surface soil and is therefore, not recommended.

### **1.5 Subsoil, 0.3 – 1 m depth**

Soils occurring at depths between 0.3 and 1 m are highly sodic, and in some instances high in chloride. If these subsoils are intended to be used as fill, it is critical that they are ameliorated.

Gypsum application is recommended to address sodicity with application rates and strategies provided in Section 4.4.

### **1.6 Subsoil > 1 m depth**

Soils occurring below 1 m are dispersive, and in some instances highly alkaline. Salinity is also an issue in some areas.

Where subsoils are either exposed as cut surfaces or stripped and replaced, gypsum application is recommended to address dispersive properties with application rates and strategies provided in Section 5.4.

### **1.7 Amelioration and fertiliser**

To ensure vigorous initial plant growth, ameliorants and fertiliser should be applied prior to planting. Table 3 summarises the ameliorants and fertiliser rates recommended to address poor soil chemical properties and nutrient deficiencies.

Fertiliser rates have been calculated based on treatment of a 0.1 m depth soil layer.

All ameliorant and fertiliser application should be incorporated into soils to the appropriate depth.

#### ***Gypsum***

Applying gypsum is recommended as it will address sodicity and help reduce dispersion that is present at the site. In all cases, once gypsum is spread, it should be mixed into the soil (or subsoil) by tillage to a depth of 0.1 m.

Gypsum is to be applied to surface soil 0 – 0.1 m at a rate of 1.5t/ha. Application of gypsum prior to stripping is recommended, as the process of surface soil stripping will provide some mixing and aid in incorporating gypsum into the soil.

For subsoil at depth between 0.3 and 1 m, a gypsum application rate of 10t/ha is recommended.

### ***Di-ammonium phosphate***

An application of 300kg/ha of di-ammonium phosphate (DAP) fertiliser is recommended to address nitrogen and phosphorus deficiencies. DAP will not address nitrogen deficiency in its entirety, but it will give soils a temporary increase in nitrogen to aid initial plant establishment.

### ***Coated Urea***

An application of 200kg/ha of polymer coated slow-release (270 day) urea is recommended. The slow-release urea will provide soluble nitrogen for plants into their second growing season and help maintain plant growth.

### ***Trace elements***

Trace element boron is needed to address deficiencies in surface soil. Many fertiliser companies can incorporate custom trace element blend into fertiliser orders at client request. It is recommended that the site staff speak directly with fertiliser suppliers to obtain a trace element fertiliser blend appropriate for addressing the sites trace element deficiencies.

Table 3: Recommended ameliorant and fertiliser application rates.

| Ameliorant / Fertiliser                                          | Unit  | Surface soil | Subsoil         |            |
|------------------------------------------------------------------|-------|--------------|-----------------|------------|
|                                                                  |       | 0.1 m depth  | 0.3 – 1 m depth | >1 m depth |
| Gypsum 1 <sup>st</sup> application                               | t/ha  | 1.5          | 10              | 10         |
| Gypsum 2 <sup>nd</sup> application                               | t/ha  | -            | 5               | 5          |
| Di-ammonium phosphate (DAP) with trace element blend (Cu, Zn, B) | kg/ha | 300          | -               | -          |
| Polymer coated (270 day) urea                                    | kg/ha | 200          | -               | -          |

### **Concluding remarks**

The recommendations in this report are based on a total of fifteen sample site.

This is a draft report and final consultation should be made before implementing any recommendations mentioned in this document.

Thank you for providing Landloch the opportunity to work with Engeny on the Roper Creek Diversion project.

Regards



Liam Thompson  
Environmental Consultant

### **References**

Bruce, R.C. & Rayment, G.E. (1982): Analytical methods and interpretations used by the Agricultural Chemistry Branch for soil and land use surveys. Qld Department of Primary

Hazelton, P. & Murphy, B. (2009): Interpreting soil results: What do all the numbers mean? CSIRO Publishing.

### **Disclaimer**

All care and diligence has been exercised in testing, interpreting data and the development of recommendations presented in this document. The monitoring and testing have been undertaken in a skilled, professional manner, according to accepted practices. Specific circumstances and research findings after the date of publication may influence the accuracy of the data and recommendations within this document.

The landscape is not uniform. Because of this non-uniformity, no monitoring, testing or sampling technique can produce completely precise results for any site. Any conclusions based on the monitoring and/or testing presented in this document can therefore only serve as a 'best' indication of the environmental condition of the site at the time of preparing this document. It should be noted that site conditions can change with time.

The information that comprises this document should only be used within the limitations stipulated herein. Landloch does not accept any risks and responsibilities for losses, damages, costs and other consequences resulting from using any information, material and recommendations in this document.

## Attachment A – Laboratory Results

**Project Number:** EW220418  
**Location:** Engeny/1384.21d  
**Sample Collection Date:** 17/11/2021  
**Sample Receival Date:** 2/02/2022  
**Sample Analysis Date:** 2/11/2022  
**Project Contact Person:** Liam Thompson

| KEY               |
|-------------------|
| Deficient         |
| Levels of Concern |

| <b>East West Enviroag</b><br><b>82 Plain St Tamworth NSW 2340</b><br><b>ph:02 67621733</b> | Lab No         | 220418-1   | 220418-2     | 220418-5    | 220418-6      |
|--------------------------------------------------------------------------------------------|----------------|------------|--------------|-------------|---------------|
|                                                                                            | Order          |            |              |             |               |
|                                                                                            | Sample ID      | TP01_0-0.1 | TP01_0.1-0.2 | TP02_0-0.02 | TP02_0.02-0.1 |
|                                                                                            | Sample Depth   | Topsoil    | Topsoil      | Topsoil     | Topsoil       |
| Analyses                                                                                   | Unit           | -          | -            | -           | -             |
| pH - Water                                                                                 | pH units       | 7.53       | 7.26         | 5.70        | 7.44          |
| Electrical Conductivity                                                                    | dS/m           | 0.18       | 0.04         | 0.40        | 0.02          |
|                                                                                            | mg/kg          | 31.7       | 23.0         | 294         | 24.3          |
| Total Nitrogen - Kjeldahl                                                                  | mg/kg          | 2306       | 595          | 2916        | 68.4          |
| Total Phosphorus - Nitric/Perchloric                                                       | mg/kg          | 344        | 291          | 674         | 144           |
| Phosphorus - Colwell extr                                                                  | mg/kg          | 8.4        | 9.2          | 18.9        | 3.8           |
| Potassium - Colwell ext                                                                    | mg/kg          | 357        | 266          | 270         | 83.4          |
| Sulphur - KCl                                                                              | mg/kg          | 35.5       | 22.1         | 32.3        | 18.5          |
| Organic Carbon                                                                             | %              | 2.34       | 0.79         | 3.87        | 0.26          |
| Copper                                                                                     | mg/kg          | 0.30       | 0.31         | 0.88        | 0.24          |
| Iron                                                                                       | mg/kg          | 13.7       | 16.3         | 148         | 4.9           |
| Manganese                                                                                  | mg/kg          | 7.60       | 8.26         | 34.9        | 5.50          |
| Zinc                                                                                       | mg/kg          | 1.53       | 0.53         | 2.95        | 0.47          |
| Boron                                                                                      | mg/kg          | 0.78       | 0.22         | 0.85        | 0.26          |
| Cation Extraction Method                                                                   | Rayment& Lyons | 15A1       | 15A1         | 15A1        | 15A1          |
| Cation Exchange Capacity                                                                   | meq/100g       | 20.9       | 9.5          | 14.3        | 4.893553      |
| Ex Calcium Percent                                                                         | %              | 84.34      | 76.45        | 47.48233    | 63.96171      |
| Ex Magnesium Percent                                                                       | %              | 10.25      | 15.06        | 38.37486    | 29.63082      |
| Ex Potassium Percent                                                                       | %              | 3.55       | 5.04         | 4.80        | 1.524769      |
| Ex Sodium Percent                                                                          | %              | 1.8        | 3.3          | 9.236094    | 4.7           |
| Ex Aluminium Percent                                                                       | %              | 0.05       | 0.12         | 0.10        | 0.23          |
| Exchangeable Calcium                                                                       | mg/kg          | 3526       | 1455         | 1359        | 626           |
| Exchangeable Magnesium                                                                     | mg/kg          | 257        | 172          | 659         | 174           |
| Exchangeable Potassium                                                                     | mg/kg          | 289        | 187          | 268         | 29.1          |
| Exchangeable Sodium                                                                        | mg/kg          | 87.2       | 72.9         | 304         | 52.4          |
| Exchangeable Aluminium                                                                     | mg/kg          | 1.00       | 1.00         | 1.35        | 1.00          |
| Exchangeable Calcium                                                                       | meq/100g       | 17.63      | 7.28         | 6.80        | 3.13          |
| Exchangeable Magnesium                                                                     | meq/100g       | 2.14       | 1.43         | 5.49        | 1.45          |
| Exchangeable Potassium                                                                     | meq/100g       | 0.74       | 0.48         | 0.69        | 0.07          |
| Exchangeable Sodium                                                                        | meq/100g       | 0.38       | 0.32         | 1.32        | 0.23          |
| Exchangeable Aluminium                                                                     | meq/100g       | 0.01       | 0.01         | 0.02        | 0.01          |
| Calcium/Magnesium Ratio                                                                    | -              | 8.2        | 5.1          | 1.2         | 2.2           |
| Cation Extraction Method                                                                   | Rayment& Lyons | 15C1       | *            | 15A2        | 15C1          |
| Cation Exchange Capacity                                                                   | meq/100g       | 10.7       | *            | 11.5        | 3.4           |
| Ex Calcium Percent                                                                         | %              | 81.49      | *            | 49.06       | 64.09         |
| Ex Magnesium Percent                                                                       | %              | 11.49      | *            | 43.06       | 26.89         |
| Ex Potassium Percent                                                                       | %              | 3.99       | *            | 4.24        | 1.43          |
| Ex Sodium Percent                                                                          | %              | 2.93       | *            | 3.51        | 7.27          |

|                                |          |      |   |          |          |
|--------------------------------|----------|------|---|----------|----------|
| <b>Ex Aluminium Percent</b>    | %        | 0.10 | * | 0.13     | 0.33     |
| <b>Exchangeable Calcium</b>    | mg/kg    | 1749 | * | 1128     | 437      |
| <b>Exchangeable Magnesium</b>  | mg/kg    | 148  | * | 594      | 110      |
| <b>Exchangeable Potassium</b>  | mg/kg    | 167  | * | 190      | 19       |
| <b>Exchangeable Sodium</b>     | mg/kg    | 72.2 | * | 92.9     | 57       |
| <b>Exchangeable Aluminium</b>  | mg/kg    | 1.0  | * | 1.4      | 1.0      |
| <b>Exchangeable Calcium</b>    | meq/100g | 8.75 | * | 5.64     | 2.19     |
| <b>Exchangeable Magnesium</b>  | meq/100g | 1.23 | * | 4.95     | 0.92     |
| <b>Exchangeable Potassium</b>  | meq/100g | 0.43 | * | 0.49     | 0.05     |
| <b>Exchangeable Sodium</b>     | meq/100g | 0.31 | * | 0.40     | 0.25     |
| <b>Exchangeable Aluminium</b>  | meq/100g | 0.01 | * | 0.02     | 0.01     |
| <b>Calcium/Magnesium Ratio</b> | -        | 7.1  | * | 1.139394 | 2.383636 |
| <b>Gravel &gt;2.0mm</b>        | %        | *    | * | *        | *        |
| <b>Coarse Sand 0.2-2.0mm</b>   | %        | *    | * | *        | *        |
| <b>Fine Sand 0.02-0.2mm</b>    | %        | *    | * | *        | *        |
| <b>Silt 0.002-0.02mm</b>       | %        | *    | * | *        | *        |
| <b>Clay &lt;0.002mm</b>        | %        | *    | * | *        | *        |
| <b>ADMC</b>                    | %        | *    | * | *        | *        |
| <b>Emerson Aggregate</b>       | Class    | *    | * | *        | *        |
| <b>Phosphorus Buffer Index</b> | mg/kg    | *    | * | *        | *        |
| <b>Field Texture</b>           | -        | *    | * | *        | *        |

220418-10 220418-14 220418-15 220418-18 220418-22 220418-23 220418-25 220418-26 220418-28

| TP03_0-<br>0.2<br>Fill<br>- | TP05_0-<br>0.1<br>Topsoil<br>- | TP05_0.1-<br>0.2<br>Topsoil<br>- | TP08_0-<br>0.2<br>Topsoil<br>- | TP14_0-<br>0.1<br>Topsoil<br>- | TP14_0.1-<br>0.2<br>Topsoil<br>- | TP16_0-<br>0.05<br>Topsoil<br>- | TP16_0.0<br>5-0.1<br>Topsoil<br>- | TP17_0-<br>0.1<br>Topsoil<br>- |
|-----------------------------|--------------------------------|----------------------------------|--------------------------------|--------------------------------|----------------------------------|---------------------------------|-----------------------------------|--------------------------------|
| 5.36                        | 5.99                           | 6.09                             | 6.14                           | 6.23                           | 7.56                             | 7.03                            | 8.47                              | 6.12                           |
| 0.08                        | 0.07                           | 0.08                             | 0.05                           | 0.15                           | 0.14                             | 0.09                            | 0.14                              | 0.06                           |
| 67.1                        | 38.7                           | 91.3                             | 40.8                           | 56.3                           | 71.5                             | 32.4                            | 37.9                              | 34.3                           |
| 881                         | 411                            | 268                              | 1353                           | 1681                           | 1021                             | 2088                            | 1078                              | 731                            |
| 516                         | 284                            | 265                              | 281                            | 528                            | 293                              | 436                             | 315                               | 233                            |
| 16.2                        | 2.4                            | 7.2                              | 32.6                           | 60.0                           | 16.8                             | 58.6                            | 23.5                              | 31.4                           |
| 167                         | 193                            | 120                              | 164                            | 208                            | 457                              | 148                             | 385                               | 351                            |
| 20.6                        | 19.4                           | 16.9                             | 22.9                           | 40.7                           | 35.0                             | 45.1                            | 42.6                              | 18.4                           |
| 1.33                        | 0.46                           | 0.37                             | 1.40                           | 1.49                           | 0.96                             | 2.29                            | 1.15                              | 0.75                           |
| 0.30                        | 0.58                           | 0.50                             | 0.26                           | 1.00                           | 0.72                             | 0.88                            | 1.58                              | 0.38                           |
| 99.8                        | 52.0                           | 31.9                             | 72.6                           | 44.6                           | 12.1                             | 57.1                            | 38.9                              | 55.6                           |
| 19.8                        | 5.24                           | 5.08                             | 5.50                           | 37.2                           | 12.5                             | 15.1                            | 18.6                              | 11.2                           |
| 0.83                        | 0.75                           | 0.59                             | 0.67                           | 1.17                           | 0.61                             | 1.16                            | 0.71                              | 0.95                           |
| 0.48                        | 0.42                           | 0.3                              | 0.34                           | 0.70                           | 0.84                             | 0.58                            | 0.58                              | <0.20                          |
| 15A1                        | 15A1                           | 15A1                             | 15A1                           | 15A1                           | 15A1                             | 15A1                            | 15A1                              | 15A1                           |
| 5.5                         | 7.5                            | 4.349049                         | 7.7                            | 16.7                           | 20.3                             | 22.9                            | 32.2                              | 5.9                            |
| 44.67828                    | 56.53382                       | 38.3992                          | 66.39103                       | 70.77                          | 58.10061                         | 70.90                           | 73.03                             | 62.0312                        |
| 39.13537                    | 30.40531                       | 42.15481                         | 22.10877                       | 20.76115                       | 29.44454                         | 22.7239                         | 21.53024                          | 23.11461                       |
| 6.93                        | 4.45                           | 3.00                             | 5.74                           | 3.08                           | 1.794282                         | 4.64                            | 2.751671                          | 10.60                          |
| 7.333164                    | 7.670331                       | 16.19545                         | 5.6                            | 5.3                            | 10.60582                         | 1.7                             | 2.7                               | 4.1                            |
| 1.92                        | 0.94                           | 0.26                             | 0.14                           | 0.12                           | 0.05                             | 0.05                            | 0.03                              | 0.19                           |
| 489                         | 846                            | 334                              | 1026                           | 2369                           | 2358                             | 3250                            | 4709                              | 738                            |
| 257                         | 273                            | 220                              | 205                            | 417                            | 717                              | 625                             | 833                               | 165                            |
| 148                         | 130                            | 50.8                             | 173                            | 201                            | 142                              | 415                             | 346                               | 246                            |
| 92.3                        | 132                            | 162                              | 99.8                           | 203                            | 495                              | 88.9                            | 197                               | 55.6                           |
| 9.45                        | 6.30                           | 1.00                             | 1.00                           | 1.80                           | 1.00                             | 1.00                            | 1.00                              | 1.00                           |
| 2.45                        | 4.23                           | 1.67                             | 5.13                           | 11.85                          | 11.79                            | 16.25                           | 23.55                             | 3.69                           |
| 2.14                        | 2.28                           | 1.83                             | 1.71                           | 3.48                           | 5.98                             | 5.21                            | 6.94                              | 1.38                           |
| 0.38                        | 0.33                           | 0.13                             | 0.44                           | 0.52                           | 0.36                             | 1.06                            | 0.89                              | 0.63                           |
| 0.40                        | 0.57                           | 0.70                             | 0.43                           | 0.88                           | 2.15                             | 0.39                            | 0.86                              | 0.24                           |
| 0.11                        | 0.07                           | 0.01                             | 0.01                           | 0.02                           | 0.01                             | 0.01                            | 0.01                              | 0.01                           |
| 1.1                         | 1.9                            | 0.9                              | 3.0                            | 3.4                            | 2.0                              | 3.1                             | 3.4                               | 2.7                            |
| *                           | *                              | *                                | *                              | *                              | 15C1                             | *                               | 15C1                              | *                              |
| *                           | *                              | *                                | *                              | *                              | 13.4                             | *                               | 16.8                              | *                              |
| *                           | *                              | *                                | *                              | *                              | 57.20                            | *                               | 68.11                             | *                              |
| *                           | *                              | *                                | *                              | *                              | 29.91                            | *                               | 25.64                             | *                              |
| *                           | *                              | *                                | *                              | *                              | 2.53                             | *                               | 3.27                              | *                              |
| *                           | *                              | *                                | *                              | *                              | 10.28                            | *                               | 2.92                              | *                              |

[illegible]

220418-29 220418-33 220418-36 220418-40 220418-41 220418-45 220418-46 220418-50 220418-51

| TP17_0.1-<br>0.2 | TP18_0-<br>0.2 | TP19_0-<br>0.2 | TP20_0-<br>0.05 | TP20_0.0<br>5-0.1 | TP21_0-<br>0.1 | TP21_0.1-<br>0.2 | TP30_0-<br>0.1 | TP30_0.1-<br>0.2 |
|------------------|----------------|----------------|-----------------|-------------------|----------------|------------------|----------------|------------------|
| Topsoil          | Topsoil        | Topsoil        | Topsoil         | Topsoil           | Topsoil        | Topsoil          | Topsoil        | Topsoil          |
| -                | -              | -              | -               | -                 | -              | -                | -              | -                |
| 6.04             | 6.92           | 7.91           | 5.19            | 6.00              | 7.42           | 8.23             | 6.24           | 6.52             |
| 0.04             | 0.16           | 0.34           | 0.35            | 0.12              | 0.29           | 0.21             | 0.07           | 0.06             |
| 22.2             | 47.7           | 87.1           | 95.6            | 39.7              | 47.9           | 54.0             | 80.2           | 37.0             |
| 432              | 1747           | 2145           | 3488            | 1502              | 2569           | 868              | 917            | 543              |
| 168              | 421            | 354            | 936             | 562               | 727            | 461              | 276            | 251              |
| 9.6              | 34.4           | 57.8           | 247             | 64                | 196            | 85.7             | 36.2           | 29.5             |
| 150              | 759            | 394            | 645             | 317               | 605            | 440              | 333            | 355              |
| 17.0             | 28.5           | 79.9           | 63.9            | 39.7              | 48.5           | 54.5             | 20.9           | 21.1             |
| 1.73             | 1.67           | 1.57           | 2.99            | 1.35              | 2.67           | 0.9              | 0.95           | 0.66             |
| 0.44             | 0.34           | 0.2            | 0.72            | 0.8               | 0.44           | 0.5              | 0.33           | 0.36             |
| 33.9             | 25.2           | 15.2           | 164.0           | 65.8              | 38.9           | 25.6             | 46.5           | 17.9             |
| 11.7             | 11.2           | 8.38           | 33.0            | 24.1              | 8.48           | 10.9             | 13.2           | 14.6             |
| 0.55             | 2.45           | 1.29           | 3.57            | 1.23              | 2.69           | 0.75             | 1.32           | 0.61             |
| <0.20            | 0.60           | 1.00           | 0.70            | 0.44              | 0.78           | 0.46             | <0.20          | 0.26             |
| 15A1             | 15A1           | 15A1           | 15A1            | 15A1              | 15A1           | 15A1             | 15A1           | 15A1             |
| 5.2              | 13.6           | 23.1           | 13.7            | 12.9              | 22.2           | 23.9             | 7.9            | 7.7              |
| 64.53815         | 65.89857       | 86.82          | 66.79           | 64.35783          | 79.02          | 70.99            | 65.92562       | 66.11            |
| 27.49025         | 22.19987       | 8.14           | 21.42571        | 25.60639          | 13.12          | 22.731           | 22.14474       | 21.6226          |
| 5.56             | 9.80           | 4.02           | 10.07           | 5.68              | 6.18           | 4.76             | 8.44           | 9.13             |
| 2.2              | 2.0            | 1.0            | 1.6             | 4.3               | 1.6            | 1.5              | 3.3            | 3.0              |
| 0.21             | 0.08           | 0.06           | 0.08            | 0.09              | 0.05           | 0.05             | 0.14           | 0.14             |
| 673              | 1786           | 4018           | 1834            | 1663              | 3503           | 3399             | 1037           | 1014             |
| 172              | 361            | 226            | 353             | 397               | 349            | 653              | 209            | 199              |
| 113              | 518            | 363            | 539             | 286               | 534            | 444              | 259            | 273              |
| 26.4             | 62.9           | 51             | 51.7            | 127               | 82.9           | 81.1             | 60.5           | 52.9             |
| 1.00             | 1.00           | 1.20           | 1.00            | 1.00              | 1.00           | 1.05             | 1.00           | 1.00             |
| 3.37             | 8.93           | 20.09          | 9.17            | 8.32              | 17.52          | 17.00            | 5.19           | 5.07             |
| 1.43             | 3.01           | 1.88           | 2.94            | 3.31              | 2.91           | 5.44             | 1.74           | 1.66             |
| 0.29             | 1.33           | 0.93           | 1.38            | 0.73              | 1.37           | 1.14             | 0.66           | 0.70             |
| 0.11             | 0.27           | 0.22           | 0.22            | 0.55              | 0.36           | 0.35             | 0.26           | 0.23             |
| 0.01             | 0.01           | 0.01           | 0.01            | 0.01              | 0.01           | 0.01             | 0.01           | 0.01             |
| 2.3              | 3.0            | 10.7           | 3.1             | 2.5               | 6.0            | 3.1              | 3.0            | 3.1              |
| *                | *              | 15C1           | 15A2            | *                 | 15C1           | 15C1             | *              | *                |
| *                | *              | 7.4            | 12.5            | *                 | 9.3            | 7.8              | *              | *                |
| *                | *              | 77.10          | 69.90           | *                 | 75.16          | 80.57            | *              | *                |
| *                | *              | 13.32          | 21.63           | *                 | 16.03          | 9.61             | *              | *                |
| *                | *              | 6.82           | 7.72            | *                 | 8.15           | 7.72             | *              | *                |
| *                | *              | 2.58           | 0.66            | *                 | 0.55           | 1.95             | *              | *                |

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220418-54 220418-55 220418-7 220418-11 220418-12 220418-16 220418-34 220418-37 220418-38

| TP31_0-<br>0.15 | TP31_0.1<br>5-0.30 | TP02_0.3-<br>0.5 | TP03_0.2-<br>0.4 | TP03_0.7-<br>0.9 | TP05_0.6-<br>0.8 | TP18_0.2-<br>0.4 | TP19_0.2-<br>0.4 | TP19_0.7-<br>0.9 |
|-----------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Topsoil         | Topsoil            | Natural          | Fill             |                  | Alluvium         | Topsoil          | Topsoil          | Alluvium         |
| -               | -                  | -                | -                | -                | -                | -                | -                | -                |
| 5.89            | 6.03               | 6.36             | 5.54             | 4.84             | 7.18             | 6.78             | 7.75             | 6.94             |
| 0.04            | 0.01               | 0.21             | 0.07             | 0.38             | 0.14             | 0.07             | 0.08             | 0.08             |
| 20.2            | 27.3               | 224              | 39.3             | 372              | 142              | 32.4             | 55.9             | 72.1             |
| 780             | *                  | *                | *                | *                | *                | *                | *                | *                |
| 198             | *                  | *                | *                | *                | *                | *                | *                | *                |
| 18.3            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 189 *           |                    | *                | *                | *                | *                | *                | *                | *                |
| 17.7            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 0.86            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 0.34            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 51.6            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 13.7            | *                  | *                | *                | *                | *                | *                | *                | *                |
| 0.99            | *                  | *                | *                | *                | *                | *                | *                | *                |
| <0.20           | *                  | *                | *                | *                | *                | *                | *                | *                |
| 15A1            | 15A1               | 15A1             | 15A1             | 15A1             | 15A1             | 15A1             | 15A1             | 15A1             |
| 5.9             | 5.031752           | 9.7              | 5.7              | 9.6              | 4.406858         | 12.3             | 7.1              | 16.5             |
| 66.38           | 60.11822           | 27.33737         | 51.47526         | 7.052724         | 50.94332         | 71.05            | 79.72            | 65.13            |
| 25.16448        | 31.79807           | 52.94149         | 33.67267         | 43.21522         | 24.2047          | 20.20017         | 14.23            | 28.61611         |
| 6.01            | 2.496964           | 1.291031         | 4.12             | 1.611595         | 1.71062          | 5.57             | 3.21             | 3.72             |
| 2.3             | 5.4                | 18.30997         | 7.470367         | 35.444           | 22.88922         | 3.1              | 2.7              | 2.5              |
| 0.19            | 0.22               | 0.12             | 3.26             | 12.67646         | 0.25             | 0.09             | 0.16             | 0.07             |
| 787             | 605                | 531              | 586              | 136              | 449              | 1747             | 1139             | 2147             |
| 179             | 192                | 617              | 230              | 500              | 128              | 298              | 122              | 566              |
| 139             | 49                 | 48.9             | 91.5             | 60.6             | 29.4             | 267              | 89.4             | 239              |
| 30.7            | 62.1               | 409              | 97.8             | 786              | 232              | 87.3             | 44.2             | 93.6             |
| 1.00            | 1.00               | 1.05             | 16.70            | 110.00           | 1.00             | 1.00             | 1.00             | 1.00             |
| 3.94            | 3.03               | 2.66             | 2.93             | 0.68             | 2.25             | 8.74             | 5.70             | 10.74            |
| 1.49            | 1.60               | 5.14             | 1.92             | 4.17             | 1.07             | 2.48             | 1.02             | 4.72             |
| 0.36            | 0.13               | 0.13             | 0.23             | 0.16             | 0.08             | 0.68             | 0.23             | 0.61             |
| 0.13            | 0.27               | 1.78             | 0.43             | 3.42             | 1.01             | 0.38             | 0.19             | 0.41             |
| 0.01            | 0.01               | 0.01             | 0.19             | 1.22             | 0.01             | 0.01             | 0.01             | 0.01             |
| 2.6             | 1.9                | 0.5              | 1.5              | 0.2              | 2.1              | 3.5              | 5.6              | 2.3              |
| *               | *                  | *                | *                | 15A2             | *                | *                | 15C1             | *                |
| *               | *                  | *                | *                | 6.7              | *                | *                | 4.2              | *                |
| *               | *                  | *                | *                | 3.40             | *                | *                | 79.78            | *                |
| *               | *                  | *                | *                | 52.50            | *                | *                | 13.65            | *                |
| *               | *                  | *                | *                | 1.52             | *                | *                | 4.99             | *                |
| *               | *                  | *                | *                | 24.34            | *                | *                | 1.32             | *                |



220418-47 220418-56 220418-3 220418-4 220418-8 220418-9 220418-13 220418-17 220418-21

| TP21_0.9-<br>1.1 | TP31_0.5-<br>0.7 | TP01_1.5-<br>1.7 | TP01_2.8-<br>3.0 | TP02_1.3-<br>1.5 | TP02_2-<br>2.2 | TP03_1.3-<br>1.5 | TP05_1.7-<br>1.9 | TP08_1.4-<br>1.6 |
|------------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|------------------|
| Alluvium         | Alluvium         | Alluvium         | Alluvium         | Residual         | Residual       |                  | Alluvium         | Residual         |
| -                | -                | -                | -                | -                | -              | -                | -                | -                |
| 9.12             | 6.93             | 8.14             | 7.54             | 6.30             | 5.2            | 5.27             | 6.49             | 8.9              |
| 0.78             | 0.2              | 0.23             | 0.05             | 0.36             | 0.73           | 0.45             | 0.37             | 0.85             |
| 616              | 188              | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| *                | *                | *                | *                | *                | *              | *                | *                | *                |
| 15A1             | 15A1             | *                | *                | *                | *              | *                | *                | *                |
| 42.8             | 20.5             | *                | *                | *                | *              | *                | *                | *                |
| 56.40822         | 55.44264         | *                | *                | *                | *              | *                | *                | *                |
| 26.586           | 35.61844         | *                | *                | *                | *              | *                | *                | *                |
| 1.059191         | 0.792843         | *                | *                | *                | *              | *                | *                | *                |
| 15.92065         | 8.091801         | *                | *                | *                | *              | *                | *                | *                |
| 0.03             | 0.05             | *                | *                | *                | *              | *                | *                | *                |
| 4834             | 2270             | *                | *                | *                | *              | *                | *                | *                |
| 1367             | 875              | *                | *                | *                | *              | *                | *                | *                |
| 177              | 63.3             | *                | *                | *                | *              | *                | *                | *                |
| 1569             | 381              | *                | *                | *                | *              | *                | *                | *                |
| 1.00             | 1.00             | *                | *                | *                | *              | *                | *                | *                |
| 24.17            | 11.35            | *                | *                | *                | *              | *                | *                | *                |
| 11.39            | 7.29             | *                | *                | *                | *              | *                | *                | *                |
| 0.45             | 0.16             | *                | *                | *                | *              | *                | *                | *                |
| 6.82             | 1.66             | *                | *                | *                | *              | *                | *                | *                |
| 0.01             | 0.01             | *                | *                | *                | *              | *                | *                | *                |
| 2.1              | 1.6              | *                | *                | *                | *              | *                | *                | *                |
| 15C1             | *                | *                | *                | *                | *              | *                | *                | *                |
| 18.6             | *                | *                | *                | *                | *              | *                | *                | *                |
| 32.08            | *                | *                | *                | *                | *              | *                | *                | *                |
| 43.04            | *                | *                | *                | *                | *              | *                | *                | *                |
| 1.89             | *                | *                | *                | *                | *              | *                | *                | *                |
| 22.94            | *                | *                | *                | *                | *              | *                | *                | *                |



220418-24 220418-27 220418-31 220418-32 220418-35 220418-39 220418-42 220418-43 220418-44

TP14\_1.6- TP16\_1.3- TP17\_1.3- TP17\_3.8- TP18\_3.3- TP19\_3- TP20\_1.4- TP20\_2- TP20\_3.8-  
1.8 1.5 1.5 4.0 3.5 .32 1.6 2.2 4

Alluvium Alluvium Alluvium Alluvium Alluvium Alluvium Alluvium Alluvium

- - - - - - - - -

9.22 8.96 9.26 8.41 7.86 6.35 7.55 6.93 5.42

0.81 1.01 0.14 0.10 0.02 0.26 0.91 0.45 1.58

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## Attachment B – Laboratory Reports



**eastwest**  
geo ag enviro

82 Plain Street Tamworth NSW 2340  
e admin@eastwestonline.com.au  
t 02 6762 1733  
f 02 6765 9109  
abn 82 125 442 382

eastwestonline.com.au 

## ANALYSIS REPORT SOIL

**PROJECT NO: EW220418**

**Date of Issue: 15/02/2022**

Customer: LANDLOCH PTY. LTD. (QLD)

Report No: 1

Address: PO BOX 57 HARLAXTON QLD 4350

Date Received: 2/02/2022

Matrix: Soil

Attention: Liam Thompson

Location: Engeny/1384.21d

Phone: 07 4613 1825

Sampler ID: Client

Fax: 07 4613 1826

Date of Sampling: 17/11/2021

Email: thompson@landloch.com.au

Sample Condition: Acceptable

### Comments:

3b = moderate to slight dispersion of the remould.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

Signed:

**Stephanie Cameron**  
Laboratory Operations Manager



East West is certified by the Australian-Asian Soil & Plant Analysis Council to perform various soil and plant tissue analysis. The tests reported herein have been performed in accordance with our terms of accreditation.

This report must not be reproduced except in full and EWEA takes no responsibility of the end use of the results within this report.

This analysis relates to the sample submitted and it is the client's responsibility to make certain the sample is representative of the matrix to be tested.

Samples will be discarded one month after the date of this report. Please advise if you wish to have your sample/s returned.

*results you can rely on*



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID<br><br>DEPTH |                    |                  |          |      | TP01_0-0.1 | TP01_0.1-0.2 | TP01_1.5-1.7 | TP01_2.8-3.0 |
|-------------------------------|--------------------|------------------|----------|------|------------|--------------|--------------|--------------|
|                               |                    |                  |          |      | Topsoil    | Topsoil      | Alluvium     | Alluvium     |
| Test Parameter                | Method Description | Method Reference | Units    | LOR  | 220418-1   | 220418-2     | 220418-3     | 220418-4     |
| pH (1:5 in H2O)               | Electrode          | R&L 4A2          | pH units | na   | 7.53       | 7.26         | 8.14         | 7.54         |
| Chloride Soluble              | DA                 | DAP-06           | mg/kg    | 2    | 31.7       | 23.0         | NA           | NA           |
| Electrical Conductivity       | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.18       | 0.04         | 0.23         | 0.05         |
| Total N (LECO)                | LECO               | R&L 7A5          | mg/kg    | 50   | 2306       | 595          | NA           | NA           |
| Phosphorus (Total)            | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | 344        | 291          | NA           | NA           |
| Organic Carbon (LECO)         | LECO               | R&L 6B3          | %        | 0.05 | 2.34       | 0.79         | NA           | NA           |
| Phosphorus (Colwell)          | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | 8.4        | 9.2          | NA           | NA           |
| Potassium (Available)         | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | 357        | 266          | NA           | NA           |
| Sulphate-Sulphur              | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | 35.5       | 22.1         | NA           | NA           |
| Extractable Copper            | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.30       | 0.31         | NA           | NA           |
| Extractable Zinc              | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 1.53       | 0.53         | NA           | NA           |
| Extractable Manganese         | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 7.60       | 8.26         | NA           | NA           |
| Extractable Iron              | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 13.7       | 16.3         | NA           | NA           |
| Extractable Boron             | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | 0.78       | 0.22         | NA           | NA           |
| Exchangeable Potassium        | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 289        | 187          | NA           | NA           |
| Exchangeable Calcium          | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 3526       | 1455         | NA           | NA           |
| Exchangeable Magnesium        | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 257        | 172          | NA           | NA           |
| Exchangeable Sodium           | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 87.2       | 72.9         | NA           | NA           |
| Exchangeable Aluminium        | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | <1.00      | <1.00        | NA           | NA           |
| Exchangeable Potassium        | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.74       | 0.48         | NA           | NA           |
| Exchangeable Calcium          | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 17.6       | 7.28         | NA           | NA           |
| Exchangeable Magnesium        | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 2.14       | 1.43         | NA           | NA           |
| Exchangeable Sodium           | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.38       | 0.32         | NA           | NA           |
| Exchangeable Aluminium        | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.01       | 0.01         | NA           | NA           |
| ECEC                          | Calculation        | PMS-15A1         | cmol/kg  | na   | 20.9       | 9.52         | NA           | NA           |
| Ca/Mg Ratio                   | Calculation        | PMS-15A1         | cmol/kg  | na   | 8.23       | 5.08         | NA           | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP01_0-0.1 | TP01_0.1-0.2 | TP01_1.5-1.7 | TP01_2.8-3.0 |
|--------------------------|--------------------|------------------|---------|-----|------------|--------------|--------------|--------------|
|                          |                    |                  |         |     | Topsoil    | Topsoil      | Alluvium     | Alluvium     |
| DEPTH                    |                    |                  |         |     |            |              |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-1   | 220418-2     | 220418-3     | 220418-4     |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.35       | 0.33         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 3.55       | 5.04         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 84.3       | 76.5         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 10.2       | 15.1         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 1.81       | 3.33         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.05       | 0.12         | NA           | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA         | NA           | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 167        | NA           | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | 1749       | NA           | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 148        | NA           | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 72.2       | NA           | NA           | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP01_0-0.1 | TP01_0.1-0.2 | TP01_1.5-1.7 | TP01_2.8-3.0 |
|--------------------------|--------------------|------------------|---------|-----|------------|--------------|--------------|--------------|
|                          |                    |                  |         |     | Topsoil    | Topsoil      | Alluvium     | Alluvium     |
| DEPTH                    |                    |                  |         |     |            |              |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-1   | 220418-2     | 220418-3     | 220418-4     |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 0.43       | NA           | NA           | NA           |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 8.75       | NA           | NA           | NA           |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | 1.23       | NA           | NA           | NA           |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 0.31       | NA           | NA           | NA           |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | 10.7       | NA           | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | 7.09       | NA           | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | 0.35       | NA           | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | 3.99       | NA           | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | 81.5       | NA           | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | 11.5       | NA           | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | 2.93       | NA           | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | 0.10       | 0.10         | NA           | NA           |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA         | NA           | 5            | 3b           |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP02_0-0.02 | TP02_0.02-0.1 | TP02_0.3-0.5 | TP02_1.3-1.5 |
|-------------------------|--------------------|------------------|----------|------|-------------|---------------|--------------|--------------|
|                         |                    |                  |          |      | Topsoil     | Topsoil       | Natural      | Residual     |
| DEPTH                   |                    |                  |          |      |             |               |              |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-5    | 220418-6      | 220418-7     | 220418-8     |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 5.70        | 7.44          | 6.36         | 6.30         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | 294         | 24.3          | 224          | NA           |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.40        | 0.02          | 0.21         | 0.36         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | 2916        | 68.4          | NA           | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | 674         | 144           | NA           | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | 3.87        | 0.26          | NA           | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | 18.9        | 3.8           | NA           | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | 270         | 83.4          | NA           | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | 32.3        | 18.5          | NA           | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.88        | 0.24          | NA           | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 2.95        | 0.47          | NA           | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 34.9        | 5.50          | NA           | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 148         | 4.86          | NA           | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | 0.85        | 0.26          | NA           | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 268         | 29.1          | 48.9         | NA           |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 1359        | 626           | 531          | NA           |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 659         | 174           | 617          | NA           |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 304         | 52.4          | 409          | NA           |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | 1.35        | <1.00         | 1.05         | NA           |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.69        | 0.07          | 0.13         | NA           |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 6.80        | 3.13          | 2.66         | NA           |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 5.49        | 1.45          | 5.14         | NA           |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 1.32        | 0.23          | 1.78         | NA           |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.02        | 0.01          | 0.01         | NA           |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | 14.3        | 4.89          | 9.71         | NA           |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | 1.24        | 2.16          | 0.52         | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP02_0-0.02 | TP02_0.02-0.1 | TP02_0.3-0.5 | TP02_1.3-1.5 |
|--------------------------|--------------------|------------------|---------|-----|-------------|---------------|--------------|--------------|
|                          |                    |                  |         |     | Topsoil     | Topsoil       | Natural      | Residual     |
| DEPTH                    |                    |                  |         |     |             |               |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-5    | 220418-6      | 220418-7     | 220418-8     |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.13        | 0.05          | 0.02         | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 4.80        | 1.52          | 1.29         | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 47.5        | 64.0          | 27.3         | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 38.4        | 29.6          | 52.9         | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 9.24        | 4.66          | 18.3         | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.10        | 0.23          | 0.12         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 190         | NA            | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | 1128        | NA            | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 594         | NA            | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 92.9        | NA            | NA           | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 0.49        | NA            | NA           | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 5.64        | NA            | NA           | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | 4.95        | NA            | NA           | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 0.40        | NA            | NA           | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | 11.5        | NA            | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | 1.14        | NA            | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | 0.10        | NA            | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | 4.24        | NA            | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | 49.1        | NA            | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | 43.1        | NA            | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | 3.51        | NA            | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | 0.13        | 0.10          | 0.10         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | 19.0          | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA          | 437           | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | 110           | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | 57.0          | NA           | NA           |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP02_0-0.02 | TP02_0.02-0.1 | TP02_0.3-0.5 | TP02_1.3-1.5 |
|--------------------------|--------------------|------------------|---------|-----|-------------|---------------|--------------|--------------|
|                          |                    |                  |         |     | Topsoil     | Topsoil       | Natural      | Residual     |
| DEPTH                    |                    |                  |         |     |             |               |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-5    | 220418-6      | 220418-7     | 220418-8     |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | 0.05          | NA           | NA           |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | 2.19          | NA           | NA           |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA          | 0.92          | NA           | NA           |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | 0.25          | NA           | NA           |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | 3.41          | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | 2.38          | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | 0.05          | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA          | 1.43          | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA          | 64.1          | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA          | 26.9          | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA          | 7.27          | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | 0.14        | 0.33          | 0.34         | NA           |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA          | NA            | 2            | 6            |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP02_2-2.2 | TP03_0-0.2 | TP03_0.2-0.4 | TP03_0.7-0.9 |
|-------------------------|--------------------|------------------|----------|------|------------|------------|--------------|--------------|
|                         |                    |                  |          |      | Residual   | Fill       | Fill         |              |
| DEPTH                   |                    |                  |          |      |            |            |              |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-9   | 220418-10  | 220418-11    | 220418-12    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 5.20       | 5.36       | 5.54         | 4.84         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA         | 67.1       | 39.3         | 372          |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.73       | 0.08       | 0.07         | 0.38         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA         | 881        | NA           | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA         | 516        | NA           | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA         | 1.33       | NA           | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA         | 16.2       | NA           | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA         | 167        | NA           | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA         | 20.6       | NA           | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | 0.30       | NA           | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | 0.83       | NA           | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | 19.8       | NA           | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | 99.8       | NA           | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA         | 0.48       | NA           | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 148        | 91.5         | 60.6         |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA         | 489        | 586          | 136          |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 257        | 230          | 500          |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 92.3       | 97.8         | 786          |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA         | 9.45       | 16.7         | 110          |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 0.38       | 0.23         | 0.16         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 2.45       | 2.93         | 0.68         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 2.14       | 1.92         | 4.17         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 0.40       | 0.43         | 3.42         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA         | 0.11       | 0.19         | 1.22         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | 5.47       | 5.69         | 9.64         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | 1.14       | 1.53         | 0.16         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP02_2-2.2 | TP03_0-0.2 | TP03_0.2-0.4 | TP03_0.7-0.9 |
|--------------------------|--------------------|------------------|---------|-----|------------|------------|--------------|--------------|
|                          |                    |                  |         |     | Residual   | Fill       | Fill         |              |
| DEPTH                    |                    |                  |         |     |            |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-9   | 220418-10  | 220418-11    | 220418-12    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA         | 0.18       | 0.12         | 0.04         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA         | 6.93       | 4.12         | 1.61         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA         | 44.7       | 51.5         | 7.05         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA         | 39.1       | 33.7         | 43.2         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA         | 7.33       | 7.47         | 35.4         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA         | 1.92       | 3.26         | 12.7         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | 39.6         |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA         | NA         | NA           | 45.5         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | 422          |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | 375          |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | 0.10         |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | 0.23         |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | 3.52         |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | 1.63         |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | 6.70         |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | 0.06         |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | 0.03         |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | 1.52         |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | 3.40         |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | 52.5         |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | 24.3         |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA         | 0.91       | 1.61         | 18.2         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA           | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID<br><br>DEPTH |                    |                  |         |     | TP02_2-2.2 | TP03_0-0.2 | TP03_0.2-0.4 | TP03_0.7-0.9 |
|-------------------------------|--------------------|------------------|---------|-----|------------|------------|--------------|--------------|
|                               |                    |                  |         |     | Residual   | Fill       | Fill         |              |
| Test Parameter                | Method Description | Method Reference | Units   | LOR | 220418-9   | 220418-10  | 220418-11    | 220418-12    |
| Exchangeable Potassium        | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium          | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium        | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium           | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| ECEC                          | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Ca/Mg Ratio                   | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| K/Mg Ratio                    | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Potassium %      | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium %        | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium %      | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium %         | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Aluminium %      | Calculation        | PMS-15C1         | %       | na  | NA         | 3.08       | 5.44         | 35.8         |
| Emerson Aggregate Test        | Class              | PMS-21           | Number  | na  | 5          | NA         | 3b           | 3b           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP03_1.3-1.5 | TP05_0-0.1 | 0.1-0.2   | TP05_0.6-0.8 |
|-------------------------|--------------------|------------------|----------|------|--------------|------------|-----------|--------------|
|                         |                    |                  |          |      |              | Topsoil    | Topsoil   | Alluvium     |
| DEPTH                   |                    |                  |          |      |              |            |           |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-13    | 220418-14  | 220418-15 | 220418-16    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 5.27         | 5.99       | 6.09      | 7.18         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA           | 38.7       | 91.3      | 142          |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.45         | 0.07       | 0.08      | 0.14         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | 411        | 268       | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | 284        | 265       | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | 0.46       | 0.37      | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | 2.4        | 7.2       | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | 193        | 120       | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | 19.4       | 16.9      | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.58       | 0.50      | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.75       | 0.59      | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 5.24       | 5.08      | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 52.0       | 31.9      | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | 0.42       | 0.30      | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 130        | 50.8      | 29.4         |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA           | 846        | 334       | 449          |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 273        | 220       | 128          |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 132        | 162       | 232          |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA           | 6.30       | <1.00     | <1.00        |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.33       | 0.13      | 0.08         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 4.23       | 1.67      | 2.25         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 2.28       | 1.83      | 1.07         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.57       | 0.70      | 1.01         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA           | 0.07       | 0.01      | 0.01         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 7.48       | 4.35      | 4.41         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 1.86       | 0.91      | 2.10         |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP03_1.3-1.5 | TP05_0-0.1 | 0.1-0.2   | TP05_0.6-0.8 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|-----------|--------------|
|                          |                    |                  |         |     |              | Topsoil    | Topsoil   | Alluvium     |
| DEPTH                    |                    |                  |         |     |              |            |           |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-13    | 220418-14  | 220418-15 | 220418-16    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA           | 0.15       | 0.07      | 0.07         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA           | 4.45       | 3.00      | 1.71         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA           | 56.5       | 38.4      | 50.9         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA           | 30.4       | 42.2      | 24.2         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA           | 7.67       | 16.2      | 22.9         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA           | 0.94       | 0.26      | 0.25         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA        | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA           | 1.05       | 0.17      | 0.17         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA        | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP03_1.3-1.5 | TP05_0-0.1 | 0.1-0.2   | TP05_0.6-0.8 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|-----------|--------------|
|                          |                    |                  |         |     |              | Topsoil    | Topsoil   | Alluvium     |
| DEPTH                    |                    |                  |         |     |              |            |           |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-13    | 220418-14  | 220418-15 | 220418-16    |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA        | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA        | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA           | 2.05       | 0.33      | 0.33         |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | 3b           | NA         | NA        | 2            |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP05_1.7-1.9 | TP08_0-0.2 | TP08_1.4-1.6 | TP14_0-0.1 |
|-------------------------|--------------------|------------------|----------|------|--------------|------------|--------------|------------|
|                         |                    |                  |          |      | Alluvium     | Topsoil    | Residual     | Topsoil    |
| DEPTH                   |                    |                  |          |      |              |            |              |            |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-17    | 220418-18  | 220418-21    | 220418-22  |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 6.49         | 6.14       | 8.90         | 6.23       |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA           | 40.8       | NA           | 56.3       |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.37         | 0.05       | 0.85         | 0.15       |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | 1353       | NA           | 1681       |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | 281        | NA           | 528        |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | 1.40       | NA           | 1.49       |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | 32.6       | NA           | 60.0       |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | 164        | NA           | 208        |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | 22.9       | NA           | 40.7       |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.26       | NA           | 1.00       |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.67       | NA           | 1.17       |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 5.50       | NA           | 37.2       |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 72.6       | NA           | 44.6       |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | 0.34       | NA           | 0.70       |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 173        | NA           | 201        |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA           | 1026       | NA           | 2369       |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 205        | NA           | 417        |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 99.8       | NA           | 203        |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA           | <1.00      | NA           | 1.80       |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.44       | NA           | 0.52       |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 5.13       | NA           | 11.8       |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 1.71       | NA           | 3.48       |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.43       | NA           | 0.88       |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA           | 0.01       | NA           | 0.02       |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 7.73       | NA           | 16.7       |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 3.00       | NA           | 3.41       |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP05_1.7-1.9 | TP08_0-0.2 | TP08_1.4-1.6 | TP14_0-0.1 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Residual     | Topsoil    |
| DEPTH                    |                    |                  |         |     |              |            |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-17    | 220418-18  | 220418-21    | 220418-22  |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA           | 0.26       | NA           | 0.15       |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA           | 5.74       | NA           | 3.08       |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA           | 66.4       | NA           | 70.8       |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA           | 22.1       | NA           | 20.8       |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA           | 5.62       | NA           | 5.27       |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA           | 0.14       | NA           | 0.12       |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA         |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA           | 0.17       | NA           | 0.30       |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP05_1.7-1.9 | TP08_0-0.2 | TP08_1.4-1.6 | TP14_0-0.1 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Residual     | Topsoil    |
| DEPTH                    |                    |                  |         |     |              |            |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-17    | 220418-18  | 220418-21    | 220418-22  |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA           | 0.33       | NA           | 0.59       |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA           | NA         | 5            | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP14_0.1-0.2 | TP14_1.6-1.8 | TP16_0-0.05 | TP16_0.05-0.1 |
|-------------------------|--------------------|------------------|----------|------|--------------|--------------|-------------|---------------|
|                         |                    |                  |          |      | Topsoil      | Alluvium     | Topsoil     | Topsoil       |
| DEPTH                   |                    |                  |          |      |              |              |             |               |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-23    | 220418-24    | 220418-25   | 220418-26     |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 7.56         | 9.22         | 7.03        | 8.47          |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | 71.5         | NA           | 32.4        | 37.9          |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.14         | 0.81         | 0.09        | 0.14          |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | 1021         | NA           | 2088        | 1078          |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | 293          | NA           | 436         | 315           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | 0.96         | NA           | 2.29        | 1.15          |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | 16.8         | NA           | 58.6        | 23.5          |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | 457          | NA           | 148         | 385           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | 35.0         | NA           | 45.1        | 42.6          |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.72         | NA           | 0.88        | 1.58          |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.61         | NA           | 1.16        | 0.71          |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 12.5         | NA           | 15.1        | 18.6          |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 12.1         | NA           | 57.1        | 38.9          |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | 0.84         | NA           | 0.58        | 0.58          |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 142          | NA           | 415         | 346           |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 2358         | NA           | 3250        | 4709          |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 717          | NA           | 625         | 833           |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 495          | NA           | 88.9        | 197           |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | <1.00        | NA           | <1.00       | <1.00         |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.36         | NA           | 1.06        | 0.89          |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 11.8         | NA           | 16.3        | 23.5          |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 5.98         | NA           | 5.21        | 6.94          |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 2.15         | NA           | 0.39        | 0.86          |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.01         | NA           | 0.01        | 0.01          |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | 20.3         | NA           | 22.9        | 32.2          |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | 1.97         | NA           | 3.12        | 3.39          |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP14_0.1-0.2 | TP14_1.6-1.8 | TP16_0-0.05 | TP16_0.05-0.1 |
|--------------------------|--------------------|------------------|---------|-----|--------------|--------------|-------------|---------------|
|                          |                    |                  |         |     | Topsoil      | Alluvium     | Topsoil     | Topsoil       |
| DEPTH                    |                    |                  |         |     |              |              |             |               |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-23    | 220418-24    | 220418-25   | 220418-26     |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.06         | NA           | 0.20        | 0.13          |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 1.79         | NA           | 4.64        | 2.75          |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 58.1         | NA           | 70.9        | 73.0          |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 29.4         | NA           | 22.7        | 21.5          |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 10.6         | NA           | 1.69        | 2.66          |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.05         | NA           | 0.05        | 0.03          |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA          | NA            |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA           | NA          | NA            |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA          | NA            |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA          | NA            |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA          | NA            |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA          | NA            |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA          | NA            |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA          | NA            |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA          | NA            |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | 0.17         | NA           | 0.17        | 0.17          |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 132          | NA           | NA          | 214           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | 1533         | NA           | NA          | 2289          |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 481          | NA           | NA          | 517           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 317          | NA           | NA          | 113           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP14_0.1-0.2 | TP14_1.6-1.8 | TP16_0-0.05 | TP16_0.05-0.1 |
|--------------------------|--------------------|------------------|---------|-----|--------------|--------------|-------------|---------------|
|                          |                    |                  |         |     | Topsoil      | Alluvium     | Topsoil     | Topsoil       |
| DEPTH                    |                    |                  |         |     |              |              |             |               |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-23    | 220418-24    | 220418-25   | 220418-26     |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 0.34         | NA           | NA          | 0.55          |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 7.67         | NA           | NA          | 11.4          |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | 4.01         | NA           | NA          | 4.31          |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 1.38         | NA           | NA          | 0.49          |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | 13.4         | NA           | NA          | 16.8          |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | 1.91         | NA           | NA          | 2.66          |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | 0.08         | NA           | NA          | 0.13          |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | 2.53         | NA           | NA          | 3.27          |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | 57.2         | NA           | NA          | 68.1          |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | 29.9         | NA           | NA          | 25.6          |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | 10.3         | NA           | NA          | 2.92          |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | 0.08         | NA           | 0.08        | 0.07          |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA           | 2            | NA          | NA            |



results you can rely on



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP16_1.3-1.5 | TP17_0-0.1 | TP17_0.1-0.2 | TP17_1.3-1.5 |
|-------------------------|--------------------|------------------|----------|------|--------------|------------|--------------|--------------|
|                         |                    |                  |          |      | Alluvium     | Topsoil    | Topsoil      | Alluvium     |
| DEPTH                   |                    |                  |          |      |              |            |              |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-27    | 220418-28  | 220418-29    | 220418-31    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 8.96         | 6.12       | 6.04         | 9.26         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA           | 34.3       | 22.2         | NA           |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 1.01         | 0.06       | 0.04         | 0.14         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | 731        | 432          | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | 233        | 168          | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | 0.75       | 1.73         | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | 31.4       | 9.6          | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | 351        | 150          | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | 18.4       | 17.0         | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.38       | 0.44         | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.95       | 0.55         | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 11.2       | 11.7         | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 55.6       | 33.9         | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | <0.20      | <0.20        | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 246        | 113          | NA           |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA           | 738        | 673          | NA           |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 165        | 172          | NA           |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 55.6       | 26.4         | NA           |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA           | <1.00      | <1.00        | NA           |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.63       | 0.29         | NA           |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 3.69       | 3.37         | NA           |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 1.38       | 1.43         | NA           |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.24       | 0.11         | NA           |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA           | 0.01       | 0.01         | NA           |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 5.95       | 5.21         | NA           |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 2.68       | 2.35         | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP16_1.3-1.5 | TP17_0-0.1 | TP17_0.1-0.2 | TP17_1.3-1.5 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|--------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Topsoil      | Alluvium     |
| DEPTH                    |                    |                  |         |     |              |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-27    | 220418-28  | 220418-29    | 220418-31    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA           | 0.46       | 0.20         | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA           | 10.6       | 5.56         | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA           | 62.0       | 64.5         | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA           | 23.1       | 27.5         | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA           | 4.06       | 2.20         | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA           | 0.19       | 0.21         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA           | 0.17       | 0.17         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP16_1.3-1.5 | TP17_0-0.1 | TP17_0.1-0.2 | TP17_1.3-1.5 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|--------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Topsoil      | Alluvium     |
| DEPTH                    |                    |                  |         |     |              |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-27    | 220418-28  | 220418-29    | 220418-31    |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA           | 0.07       | 0.07         | NA           |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | 2            | NA         | NA           | 2            |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP17_3.8-4.0 | TP18_0-0.2 | TP18_0.2-0.4 | TP18_3.3-3.5 |
|-------------------------|--------------------|------------------|----------|------|--------------|------------|--------------|--------------|
|                         |                    |                  |          |      | Alluvium     | Topsoil    | Topsoil      |              |
| DEPTH                   |                    |                  |          |      |              |            |              |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-32    | 220418-33  | 220418-34    | 220418-35    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 8.41         | 6.92       | 6.78         | 7.86         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA           | 47.7       | 32.4         | NA           |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.10         | 0.16       | 0.07         | 0.02         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | 1747       | NA           | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | 421        | NA           | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | 1.67       | NA           | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | 34.4       | NA           | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | 759        | NA           | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | 28.5       | NA           | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 0.34       | NA           | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | 2.45       | NA           | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 11.2       | NA           | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | 25.2       | NA           | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | 0.60       | NA           | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 518        | 267          | NA           |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA           | 1786       | 1747         | NA           |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 361        | 298          | NA           |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | 62.9       | 87.3         | NA           |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA           | <1.00      | <1.00        | NA           |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 1.33       | 0.68         | NA           |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 8.93       | 8.74         | NA           |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 3.01       | 2.48         | NA           |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | 0.27       | 0.38         | NA           |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA           | 0.01       | 0.01         | NA           |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 13.6       | 12.3         | NA           |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | 2.97       | 3.52         | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP17_3.8-4.0 | TP18_0-0.2 | TP18_0.2-0.4 | TP18_3.3-3.5 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|--------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Topsoil      |              |
| DEPTH                    |                    |                  |         |     |              |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-32    | 220418-33  | 220418-34    | 220418-35    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA           | 0.44       | 0.28         | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA           | 9.80       | 5.57         | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA           | 65.9       | 71.1         | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA           | 22.2       | 20.2         | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA           | 2.02       | 3.09         | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA           | 0.08       | 0.09         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA           | 0.17       | 0.17         | NA           |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA         | NA           | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP17_3.8-4.0 | TP18_0-0.2 | TP18_0.2-0.4 | TP18_3.3-3.5 |
|--------------------------|--------------------|------------------|---------|-----|--------------|------------|--------------|--------------|
|                          |                    |                  |         |     | Alluvium     | Topsoil    | Topsoil      |              |
| DEPTH                    |                    |                  |         |     |              |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-32    | 220418-33  | 220418-34    | 220418-35    |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA           | NA         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA           | 0.07       | 0.07         | NA           |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | 2            | NA         | 3b           | 3b           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP19_0-0.2 | TP19_0.2-0.4 | TP19_0.7-0.9 | TP19_3-.32 |
|-------------------------|--------------------|------------------|----------|------|------------|--------------|--------------|------------|
|                         |                    |                  |          |      | Topsoil    | Topsoil      | Alluvium     | Alluvium   |
| DEPTH                   |                    |                  |          |      |            |              |              |            |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-36  | 220418-37    | 220418-38    | 220418-39  |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 7.91       | 7.75         | 6.94         | 6.35       |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | 87.1       | 55.9         | 72.1         | NA         |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.34       | 0.08         | 0.08         | 0.26       |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | 2145       | NA           | NA           | NA         |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | 354        | NA           | NA           | NA         |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | 1.57       | NA           | NA           | NA         |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | 57.8       | NA           | NA           | NA         |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | 394        | NA           | NA           | NA         |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | 79.9       | NA           | NA           | NA         |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.20       | NA           | NA           | NA         |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 1.29       | NA           | NA           | NA         |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 8.38       | NA           | NA           | NA         |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 15.2       | NA           | NA           | NA         |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | 1.00       | NA           | NA           | NA         |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 363        | 89.4         | 239          | NA         |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 4018       | 1139         | 2147         | NA         |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 226        | 122          | 566          | NA         |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 51.0       | 44.2         | 93.6         | NA         |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | 1.20       | <1.00        | <1.00        | NA         |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.93       | 0.23         | 0.61         | NA         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 20.1       | 5.70         | 10.7         | NA         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 1.88       | 1.02         | 4.72         | NA         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.22       | 0.19         | 0.41         | NA         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.01       | 0.01         | 0.01         | NA         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | 23.1       | 7.14         | 16.5         | NA         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | 10.7       | 5.60         | 2.28         | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP19_0-0.2 | TP19_0.2-0.4 | TP19_0.7-0.9 | TP19_3-.32 |
|--------------------------|--------------------|------------------|---------|-----|------------|--------------|--------------|------------|
|                          |                    |                  |         |     | Topsoil    | Topsoil      | Alluvium     | Alluvium   |
| DEPTH                    |                    |                  |         |     |            |              |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-36  | 220418-37    | 220418-38    | 220418-39  |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.49       | 0.23         | 0.13         | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 4.02       | 3.21         | 3.72         | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 86.8       | 79.7         | 65.1         | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 8.14       | 14.2         | 28.6         | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 0.96       | 2.69         | 2.47         | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.06       | 0.16         | 0.07         | NA         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA         | NA           | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA           | NA           | NA         |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA           | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA         | NA           | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | 0.20       | 0.17         | 0.17         | NA         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 198        | 82.1         | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | 1148       | 673          | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 119        | 69.1         | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | 44.2       | 12.8         | NA           | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP19_0-0.2 | TP19_0.2-0.4 | TP19_0.7-0.9 | TP19_3-.32 |
|--------------------------|--------------------|------------------|---------|-----|------------|--------------|--------------|------------|
|                          |                    |                  |         |     | Topsoil    | Topsoil      | Alluvium     | Alluvium   |
| DEPTH                    |                    |                  |         |     |            |              |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-36  | 220418-37    | 220418-38    | 220418-39  |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 0.51       | 0.21         | NA           | NA         |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 5.74       | 3.37         | NA           | NA         |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | 0.99       | 0.58         | NA           | NA         |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | 0.19       | 0.06         | NA           | NA         |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | 7.44       | 4.22         | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | 5.79       | 5.84         | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | 0.51       | 0.37         | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | 6.82       | 4.99         | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | 77.1       | 79.8         | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | 13.3       | 13.7         | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | 2.58       | 1.32         | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | 0.18       | 0.26         | 0.26         | NA         |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA         | 3b           | 3b           | 3b         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP20_0-0.05 | TP20_0.05-0.1 | TP20_1.4-1.6 | TP20_2-2.2 |
|-------------------------|--------------------|------------------|----------|------|-------------|---------------|--------------|------------|
|                         |                    |                  |          |      | Topsoil     | Topsoil       | Alluvium     | Alluvium   |
| DEPTH                   |                    |                  |          |      |             |               |              |            |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-40   | 220418-41     | 220418-42    | 220418-43  |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 5.19        | 6.00          | 7.55         | 6.93       |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | 95.6        | 39.7          | NA           | NA         |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.35        | 0.12          | 0.91         | 0.45       |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | 3488        | 1502          | NA           | NA         |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | 936         | 562           | NA           | NA         |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | 2.99        | 1.35          | NA           | NA         |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | 247         | 64.0          | NA           | NA         |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | 645         | 317           | NA           | NA         |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | 63.9        | 39.7          | NA           | NA         |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 0.72        | 0.80          | NA           | NA         |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | 3.57        | 1.23          | NA           | NA         |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 33.0        | 24.1          | NA           | NA         |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | 164         | 65.8          | NA           | NA         |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | 0.70        | 0.44          | NA           | NA         |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 539         | 286           | NA           | NA         |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 1834        | 1663          | NA           | NA         |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 353         | 397           | NA           | NA         |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 51.7        | 127           | NA           | NA         |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | <1.00       | <1.00         | NA           | NA         |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 1.38        | 0.73          | NA           | NA         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 9.17        | 8.32          | NA           | NA         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 2.94        | 3.31          | NA           | NA         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.22        | 0.55          | NA           | NA         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.01        | 0.01          | NA           | NA         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | 13.7        | 12.9          | NA           | NA         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | 3.12        | 2.51          | NA           | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP20_0-0.05 | TP20_0.05-0.1 | TP20_1.4-1.6 | TP20_2-2.2 |
|--------------------------|--------------------|------------------|---------|-----|-------------|---------------|--------------|------------|
|                          |                    |                  |         |     | Topsoil     | Topsoil       | Alluvium     | Alluvium   |
| DEPTH                    |                    |                  |         |     |             |               |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-40   | 220418-41     | 220418-42    | 220418-43  |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.47        | 0.22          | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 10.1        | 5.68          | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 66.8        | 64.4          | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 21.4        | 25.6          | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 1.64        | 4.27          | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.08        | 0.09          | NA           | NA         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 376         | NA            | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | 1745        | NA            | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 324         | NA            | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | 18.9        | NA            | NA           | NA         |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 0.96        | NA            | NA           | NA         |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 8.73        | NA            | NA           | NA         |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | 2.70        | NA            | NA           | NA         |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | 0.08        | NA            | NA           | NA         |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | 12.5        | NA            | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | 3.23        | NA            | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | 0.36        | NA            | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | 7.72        | NA            | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | 69.9        | NA            | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | 21.6        | NA            | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | 0.66        | NA            | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | 0.09        | 0.09          | NA           | NA         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | NA            | NA           | NA         |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA          | NA            | NA           | NA         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | NA            | NA           | NA         |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA          | NA            | NA           | NA         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP20_0-0.05 | TP20_0.05-0.1 | TP20_1.4-1.6 | TP20_2-2.2 |
|--------------------------|--------------------|------------------|---------|-----|-------------|---------------|--------------|------------|
|                          |                    |                  |         |     | Topsoil     | Topsoil       | Alluvium     | Alluvium   |
| DEPTH                    |                    |                  |         |     |             |               |              |            |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-40   | 220418-41     | 220418-42    | 220418-43  |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA          | NA            | NA           | NA         |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA          | NA            | NA           | NA         |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA          | NA            | NA           | NA         |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA          | NA            | NA           | NA         |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA          | NA            | NA           | NA         |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | 0.26        | 0.26          | NA           | NA         |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | NA          | NA            | 2            | 2          |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP20_3.8-4 | TP21_0-0.1 | TP21_0.1-0.2 | TP21_0.9-1.1 |
|-------------------------|--------------------|------------------|----------|------|------------|------------|--------------|--------------|
| DEPTH                   |                    |                  |          |      |            | Topsoil    | Topsoil      | Alluvium     |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-44  | 220418-45  | 220418-46    | 220418-47    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 5.42       | 7.42       | 8.23         | 9.12         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA         | 47.9       | 54.0         | 616          |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 1.58       | 0.29       | 0.21         | 0.78         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA         | 2569       | 868          | NA           |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA         | 727        | 461          | NA           |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA         | 2.67       | 0.90         | NA           |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA         | 196        | 85.7         | NA           |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA         | 605        | 440          | NA           |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA         | 48.5       | 54.5         | NA           |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | 0.44       | 0.50         | NA           |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | 2.69       | 0.75         | NA           |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | 8.48       | 10.9         | NA           |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | 38.9       | 25.6         | NA           |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA         | 0.78       | 0.46         | NA           |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 534        | 444          | 177          |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA         | 3503       | 3399         | 4834         |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 349        | 653          | 1367         |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | 82.9       | 81.1         | 1569         |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA         | <1.00      | 1.05         | <1.00        |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 1.37       | 1.14         | 0.45         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 17.5       | 17.0         | 24.2         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 2.91       | 5.44         | 11.4         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | 0.36       | 0.35         | 6.82         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA         | 0.01       | 0.01         | 0.01         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | 22.2       | 23.9         | 42.8         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | 6.02       | 3.12         | 2.12         |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP20_3.8-4 | TP21_0-0.1 | TP21_0.1-0.2 | TP21_0.9-1.1 |
|--------------------------|--------------------|------------------|---------|-----|------------|------------|--------------|--------------|
|                          |                    |                  |         |     |            | Topsoil    | Topsoil      | Alluvium     |
| DEPTH                    |                    |                  |         |     |            |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-44  | 220418-45  | 220418-46    | 220418-47    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA         | 0.47       | 0.21         | 0.04         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA         | 6.18       | 4.76         | 1.06         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA         | 79.0       | 71.0         | 56.4         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA         | 13.1       | 22.7         | 26.6         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA         | 1.63       | 1.47         | 15.9         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA         | 0.05       | 0.05         | 0.03         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA           | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA           | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA           | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA         | 0.09       | 0.09         | 0.09         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | 294        | 234          | 137          |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA         | 1391       | 1252         | 1195         |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | 178        | 89.6         | 962          |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | 11.7       | 34.9         | 983          |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP20_3.8-4 | TP21_0-0.1 | TP21_0.1-0.2 | TP21_0.9-1.1 |
|--------------------------|--------------------|------------------|---------|-----|------------|------------|--------------|--------------|
|                          |                    |                  |         |     |            | Topsoil    | Topsoil      | Alluvium     |
| DEPTH                    |                    |                  |         |     |            |            |              |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-44  | 220418-45  | 220418-46    | 220418-47    |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | 0.75       | 0.60         | 0.35         |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | 6.96       | 6.26         | 5.98         |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA         | 1.48       | 0.75         | 8.02         |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | 0.05       | 0.15         | 4.27         |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | 9.25       | 7.77         | 18.6         |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | 4.69       | 8.38         | 0.75         |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | 0.51       | 0.80         | 0.04         |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA         | 8.15       | 7.72         | 1.89         |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA         | 75.2       | 80.6         | 32.1         |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA         | 16.0       | 9.61         | 43.0         |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA         | 0.55       | 1.95         | 22.9         |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA         | 0.12       | 0.15         | 0.06         |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | 5          | NA         | NA           | 3b           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP21_2.3-2.5 | TP21_2.7-2.9 | TP30_0-0.1 | TP30_0.1-0.2 |
|-------------------------|--------------------|------------------|----------|------|--------------|--------------|------------|--------------|
|                         |                    |                  |          |      | Residual     | Residual     | Topsoil    | Topsoil      |
| DEPTH                   |                    |                  |          |      |              |              |            |              |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-48    | 220418-49    | 220418-50  | 220418-51    |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 7.31         | 8.26         | 6.24       | 6.52         |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA           | NA           | 80.2       | 37.0         |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 1.35         | 1.26         | 0.07       | 0.06         |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | NA           | 917        | 543          |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | NA           | 276        | 251          |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | NA           | 0.95       | 0.66         |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | NA           | 36.2       | 29.5         |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | NA           | 333        | 355          |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | NA           | 20.9       | 21.1         |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | NA           | 0.33       | 0.36         |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | NA           | 1.32       | 0.61         |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | NA           | 13.2       | 14.6         |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | NA           | 46.5       | 17.9         |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | NA           | <0.20      | 0.26         |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | NA           | 259        | 273          |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA           | NA           | 1037       | 1014         |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | NA           | 209        | 199          |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA           | NA           | 60.5       | 52.9         |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA           | NA           | <1.00      | <1.00        |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | NA           | 0.66       | 0.70         |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | NA           | 5.19       | 5.07         |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | NA           | 1.74       | 1.66         |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA           | NA           | 0.26       | 0.23         |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA           | NA           | 0.01       | 0.01         |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | NA           | 7.86       | 7.67         |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA           | NA           | 2.98       | 3.06         |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP21_2.3-2.5 | TP21_2.7-2.9 | TP30_0-0.1 | TP30_0.1-0.2 |
|--------------------------|--------------------|------------------|---------|-----|--------------|--------------|------------|--------------|
|                          |                    |                  |         |     | Residual     | Residual     | Topsoil    | Topsoil      |
| DEPTH                    |                    |                  |         |     |              |              |            |              |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-48    | 220418-49    | 220418-50  | 220418-51    |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA           | NA           | 0.38       | 0.42         |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA           | NA           | 8.44       | 9.13         |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA           | NA           | 65.9       | 66.1         |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA           | NA           | 22.1       | 21.6         |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA           | NA           | 3.34       | 3.00         |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA           | NA           | 0.14       | 0.14         |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         | NA           |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | 0.09       | 0.09         |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         | NA           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID<br><br>DEPTH |                    |                  |         |     | TP21_2.3-2.5 | TP21_2.7-2.9 | TP30_0-0.1 | TP30_0.1-0.2 |
|-------------------------------|--------------------|------------------|---------|-----|--------------|--------------|------------|--------------|
|                               |                    |                  |         |     | Residual     | Residual     | Topsoil    | Topsoil      |
| Test Parameter                | Method Description | Method Reference | Units   | LOR | 220418-48    | 220418-49    | 220418-50  | 220418-51    |
| Exchangeable Potassium        | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium          | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium        | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium           | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| ECEC                          | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Ca/Mg Ratio                   | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| K/Mg Ratio                    | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         | NA           |
| Exchangeable Potassium %      | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Calcium %        | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Magnesium %      | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Sodium %         | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         | NA           |
| Exchangeable Aluminium %      | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | 0.06       | 0.06         |
| Emerson Aggregate Test        | Class              | PMS-21           | Number  | na  | 3b           | 6            | NA         | NA           |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP30_1.8-2 | TP30_3-3.5 | TP31_0-0.15 | TP31_0.15-0.30 |
|-------------------------|--------------------|------------------|----------|------|------------|------------|-------------|----------------|
|                         |                    |                  |          |      | Alluvium   | Alluvium   | Topsoil     | Topsoil        |
| DEPTH                   |                    |                  |          |      |            |            |             |                |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-52  | 220418-53  | 220418-54   | 220418-55      |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 8.04       | 8.92       | 5.89        | 6.03           |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | NA         | NA         | 20.2        | 27.3           |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.04       | 0.07       | 0.04        | 0.01           |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA         | NA         | 780         | NA             |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA         | NA         | 198         | NA             |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA         | NA         | 0.86        | NA             |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA         | NA         | 18.3        | NA             |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA         | NA         | 189         | NA             |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA         | NA         | 17.7        | NA             |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | NA         | 0.34        | NA             |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA         | NA         | 0.99        | NA             |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | NA         | 13.7        | NA             |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA         | NA         | 51.6        | NA             |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA         | NA         | <0.20       | NA             |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | NA         | 139         | 49.0           |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | NA         | NA         | 787         | 605            |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | NA         | 179         | 192            |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | NA         | NA         | 30.7        | 62.1           |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | NA         | NA         | <1.00       | <1.00          |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | NA         | 0.36        | 0.13           |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | NA         | 3.94        | 3.03           |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | NA         | 1.49        | 1.60           |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | NA         | NA         | 0.13        | 0.27           |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | NA         | NA         | 0.01        | 0.01           |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | NA         | 5.93        | 5.03           |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | NA         | NA         | 2.64        | 1.89           |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP30_1.8-2 | TP30_3-3.5 | TP31_0-0.15 | TP31_0.15-0.30 |
|--------------------------|--------------------|------------------|---------|-----|------------|------------|-------------|----------------|
|                          |                    |                  |         |     | Alluvium   | Alluvium   | Topsoil     | Topsoil        |
| DEPTH                    |                    |                  |         |     |            |            |             |                |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-52  | 220418-53  | 220418-54   | 220418-55      |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | NA         | NA         | 0.24        | 0.08           |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | NA         | NA         | 6.01        | 2.50           |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | NA         | NA         | 66.4        | 60.1           |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | NA         | NA         | 25.2        | 31.8           |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | NA         | NA         | 2.25        | 5.37           |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | NA         | NA         | 0.19        | 0.22           |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA         | NA         | NA          | NA             |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | NA         | NA         | 0.09        | 0.09           |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA         | NA         | NA          | NA             |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP30_1.8-2 | TP30_3-3.5 | TP31_0-0.15 | TP31_0.15-0.30 |
|--------------------------|--------------------|------------------|---------|-----|------------|------------|-------------|----------------|
|                          |                    |                  |         |     | Alluvium   | Alluvium   | Topsoil     | Topsoil        |
| DEPTH                    |                    |                  |         |     |            |            |             |                |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-52  | 220418-53  | 220418-54   | 220418-55      |
| Exchangeable Potassium   | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium     | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium   | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium      | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| ECEC                     | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Ca/Mg Ratio              | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| K/Mg Ratio               | Calculation        | PMS-15C1         | cmol/kg | na  | NA         | NA         | NA          | NA             |
| Exchangeable Potassium % | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Calcium %   | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Magnesium % | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Sodium %    | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | NA          | NA             |
| Exchangeable Aluminium % | Calculation        | PMS-15C1         | %       | na  | NA         | NA         | 0.06        | 0.06           |
| Emerson Aggregate Test   | Class              | PMS-21           | Number  | na  | 3b         | 3b         | NA          | 3b             |





# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID        |                    |                  |          |      | TP31_0.5-0.7 | TP31_1.2-1.4 | TP31_1.8-2 |  |
|-------------------------|--------------------|------------------|----------|------|--------------|--------------|------------|--|
|                         |                    |                  |          |      | Alluvium     | Alluvium     | Residual   |  |
| DEPTH                   |                    |                  |          |      |              |              |            |  |
| Test Parameter          | Method Description | Method Reference | Units    | LOR  | 220418-56    | 220418-57    | 220418-58  |  |
| pH (1:5 in H2O)         | Electrode          | R&L 4A2          | pH units | na   | 6.93         | 8.61         | 7.32       |  |
| Chloride Soluble        | DA                 | DAP-06           | mg/kg    | 2    | 188          | NA           | NA         |  |
| Electrical Conductivity | Electrode          | R&L 3A1          | dS/m     | 0.01 | 0.20         | 0.41         | 1.13       |  |
| Total N (LECO)          | LECO               | R&L 7A5          | mg/kg    | 50   | NA           | NA           | NA         |  |
| Phosphorus (Total)      | HNO3/HClO4 ICP     | ICP-03           | mg/kg    | 40   | NA           | NA           | NA         |  |
| Organic Carbon (LECO)   | LECO               | R&L 6B3          | %        | 0.05 | NA           | NA           | NA         |  |
| Phosphorus (Colwell)    | Bicarb/UV-Vis      | R&L 9B1          | mg/kg    | 1    | NA           | NA           | NA         |  |
| Potassium (Available)   | Bicarb/ICP         | R&L 18A1         | mg/kg    | 10   | NA           | NA           | NA         |  |
| Sulphate-Sulphur        | KCl40/ICP          | R&L 10D1         | mg/kg    | 3    | NA           | NA           | NA         |  |
| Extractable Copper      | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | NA           | NA         |  |
| Extractable Zinc        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.2  | NA           | NA           | NA         |  |
| Extractable Manganese   | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | NA           | NA         |  |
| Extractable Iron        | DTPA/ICP           | R&L 12A1         | mg/kg    | 0.5  | NA           | NA           | NA         |  |
| Extractable Boron       | Hot CaCl2/ICP      | R&L 12C2         | mg/kg    | 0.2  | NA           | NA           | NA         |  |
| Exchangeable Potassium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 63.3         | NA           | NA         |  |
| Exchangeable Calcium    | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 20   | 2270         | NA           | NA         |  |
| Exchangeable Magnesium  | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 875          | NA           | NA         |  |
| Exchangeable Sodium     | NH4Cl/ICP          | R&L 15A1         | mg/kg    | 10   | 381          | NA           | NA         |  |
| Exchangeable Aluminium  | KCl/ICP            | R&L 15G1         | mg/kg    | 1    | <1.00        | NA           | NA         |  |
| Exchangeable Potassium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 0.16         | NA           | NA         |  |
| Exchangeable Calcium    | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 11.4         | NA           | NA         |  |
| Exchangeable Magnesium  | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 7.29         | NA           | NA         |  |
| Exchangeable Sodium     | R&L 15A1           | R&L 15A1         | cmol/kg  | na   | 1.66         | NA           | NA         |  |
| Exchangeable Aluminium  | Calculation        | R&L 15J1         | cmol/kg  | na   | 0.01         | NA           | NA         |  |
| ECEC                    | Calculation        | PMS-15A1         | cmol/kg  | na   | 20.5         | NA           | NA         |  |
| Ca/Mg Ratio             | Calculation        | PMS-15A1         | cmol/kg  | na   | 1.56         | NA           | NA         |  |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID         |                    |                  |         |     | TP31_0.5-0.7 | TP31_1.2-1.4 | TP31_1.8-2 |  |
|--------------------------|--------------------|------------------|---------|-----|--------------|--------------|------------|--|
|                          |                    |                  |         |     | Alluvium     | Alluvium     | Residual   |  |
| DEPTH                    |                    |                  |         |     |              |              |            |  |
| Test Parameter           | Method Description | Method Reference | Units   | LOR | 220418-56    | 220418-57    | 220418-58  |  |
| K/Mg Ratio               | Calculation        | PMS-15A1         | cmol/kg | na  | 0.02         | NA           | NA         |  |
| Exchangeable Potassium % | Calculation        | PMS-15A1         | %       | na  | 0.79         | NA           | NA         |  |
| Exchangeable Calcium %   | Calculation        | PMS-15A1         | %       | na  | 55.4         | NA           | NA         |  |
| Exchangeable Magnesium % | Calculation        | PMS-15A1         | %       | na  | 35.6         | NA           | NA         |  |
| Exchangeable Sodium %    | Calculation        | PMS-15A1         | %       | na  | 8.09         | NA           | NA         |  |
| Exchangeable Aluminium % | Calculation        | PMS-15A1         | %       | na  | 0.05         | NA           | NA         |  |
| Exchangeable Potassium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         |  |
| Exchangeable Calcium     | ICP-OES            | R&L 15A2         | mg/kg   | 20  | NA           | NA           | NA         |  |
| Exchangeable Magnesium   | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         |  |
| Exchangeable Sodium      | ICP-OES            | R&L 15A2         | mg/kg   | 10  | NA           | NA           | NA         |  |
| Exchangeable Potassium   | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Calcium     | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Magnesium   | PMS-15A2           | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Sodium      | R&L 15A2           | R&L 15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| ECEC                     | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| Ca/Mg Ratio              | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| K/Mg Ratio               | Calculation        | PMS-15A2         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Potassium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Calcium %   | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Magnesium % | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Sodium %    | Calculation        | PMS-15A2         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Aluminium % | Calculation        | PMS-15A2         | %       | na  | 0.09         | NA           | NA         |  |
| Exchangeable Potassium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         |  |
| Exchangeable Calcium     | ICP-OES            | R&L 15C1         | mg/kg   | 20  | NA           | NA           | NA         |  |
| Exchangeable Magnesium   | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         |  |
| Exchangeable Sodium      | ICP-OES            | R&L 15C1         | mg/kg   | 10  | NA           | NA           | NA         |  |



# ANALYSIS REPORT

PROJECT NO: EW220418

Location: Engeny/1384.21d

| CLIENT SAMPLE ID<br><br>DEPTH |                    |                  |         |     | TP31_0.5-0.7 | TP31_1.2-1.4 | TP31_1.8-2 |  |
|-------------------------------|--------------------|------------------|---------|-----|--------------|--------------|------------|--|
|                               |                    |                  |         |     | Alluvium     | Alluvium     | Residual   |  |
| Test Parameter                | Method Description | Method Reference | Units   | LOR | 220418-56    | 220418-57    | 220418-58  |  |
| Exchangeable Potassium        | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Calcium          | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Magnesium        | PMS-15C1           | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Sodium           | R&L 15C1           | R&L 15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| ECEC                          | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| Ca/Mg Ratio                   | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| K/Mg Ratio                    | Calculation        | PMS-15C1         | cmol/kg | na  | NA           | NA           | NA         |  |
| Exchangeable Potassium %      | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Calcium %        | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Magnesium %      | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Sodium %         | Calculation        | PMS-15C1         | %       | na  | NA           | NA           | NA         |  |
| Exchangeable Aluminium %      | Calculation        | PMS-15C1         | %       | na  | 0.06         | NA           | NA         |  |
| Emerson Aggregate Test        | Class              | PMS-21           | Number  | na  | 3b           | 4            | 4          |  |

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Soils are air dried at 40°C and ground <2mm.

NB: LOR is the Lowest Obtainable Reading.

DOCUMENT END



## Attachment C – Soil Hand Textures

| Sample Name   | Texture           |
|---------------|-------------------|
| TP01_0-0.1    | Clay Loam         |
| TP01_0.1-0.2  | Clay loam, sandy  |
| TP01_1.5-1.7  | Medium Heavy Clay |
| TP01_2.8-3.0  | Sandy loam        |
| TP02_0-0.02   | Light clay        |
| TP02_0.02-0.1 | Light clay        |
| TP02_0.3-0.5  | Medium clay       |
| TP02_1.3-1.5  | Medium heavy clay |
| TP02_2-2.2    | Medium heavy clay |
| TP03_0-0.2    | Clay loam sandy   |
| TP03_0.2-0.4  | Clay loam Sandy   |
| TP03_0.7-0.9  | Medium clay       |
| TP03_1.3-1.5  | Medium clay       |
| TP05_0-0.1    | Light clay        |
| TP05_0.1-0.2  | Clay loam Sandy   |
| TP05_0.6-0.8  | Clay loam sandy   |
| TP05_1.7-1.9  | Light clay        |
| TP08_0-0.2    | Sandy clay loam   |
| TP08_1.4-1.6  | Medium clay       |
| TP14_0-0.1    | Clay loam         |

|                      |                          |
|----------------------|--------------------------|
| <b>TP14_0.1-0.2</b>  | <b>Medium clay</b>       |
| <b>TP14_1.6-1.8</b>  | <b>Medium heavy clay</b> |
| <b>TP16_0-0.05</b>   | <b>Light Clay</b>        |
| <b>TP16_0.05-0.1</b> | <b>Light clay</b>        |
| <b>TP16_1.3-1.5</b>  | <b>Medium clay</b>       |
| <b>TP17_0-0.1</b>    | <b>Clay loam</b>         |
| <b>TP17_0.1-0.2</b>  | <b>Clay loam</b>         |
| <b>TP17_1.3-1.5</b>  | <b>Medium clay</b>       |
| <b>TP17_3.8-4.0</b>  | <b>Clayey sand</b>       |
| <b>TP18_0-0.2</b>    | <b>Clay loam</b>         |
| <b>TP18_0.2-0.4</b>  | <b>Light Clay</b>        |
| <b>TP18_3.3-3.5</b>  | <b>Clay loam Sandy</b>   |
| <b>TP19_0-0.2</b>    | <b>Clay loam</b>         |
| <b>TP19_0.2-0.4</b>  | <b>Clay loam</b>         |
| <b>TP19_0.7-0.9</b>  | <b>Medium clay</b>       |
| <b>TP19_3-3.2</b>    | <b>Clayey sand</b>       |
| <b>TP20_0-0.05</b>   | <b>Clay loam</b>         |
| <b>TP20_0.05-0.1</b> | <b>Clay loam</b>         |
| <b>TP20_1.4-1.6</b>  | <b>Medium clay</b>       |
| <b>TP20_2-2.2</b>    | <b>Medium clay</b>       |
| <b>TP20_3.8-4</b>    | <b>Medium heavy clay</b> |
| <b>TP21_0-0.1</b>    | <b>Clay loam</b>         |

[illegible]

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