



# ANALYTICAL REPORT

|               |              |      |                       |              |
|---------------|--------------|------|-----------------------|--------------|
| Report Number | 57131-15     | H665 | ANDY WHORTON          | Client 50026 |
| Date Received | 22-JAN-2015  |      | 4RECYCLING LTD        |              |
| Date Reported | 03-FEB-2015  |      | UNIT 1A CARADON WORKS |              |
| Project       | LIQUID WASTE |      | HAIGH PARK ROAD       |              |
| Reference     | 50026        |      | STOURTON              |              |
| Order Number  | 20140075     |      | LEEDS LS10 1RT        |              |

| Laboratory Reference |       | SLUR30796   | SLUR30797              | SLUR30798            |  |  |  |  |  |  |  |
|----------------------|-------|-------------|------------------------|----------------------|--|--|--|--|--|--|--|
| Sample Reference     |       | WHEY JAN 15 | BALANCE<br>TANK JAN 15 | DAF SLUDGE<br>JAN 15 |  |  |  |  |  |  |  |
| Determinand          | Unit  | WASTE       | WASTE                  | WASTE                |  |  |  |  |  |  |  |
| Oven Dry Solids      | %     | 3.92        | 0.50                   | 0.29                 |  |  |  |  |  |  |  |
| Conductivity 1:6     | uS/cm | 1014        | 412                    | 41.8                 |  |  |  |  |  |  |  |
| Total Nitrogen       | % w/w | 0.08        | 0.03                   | 0.02                 |  |  |  |  |  |  |  |
| Ammonium Nitrogen    | mg/kg | <10         | <10                    | <10                  |  |  |  |  |  |  |  |
| Total Phosphorus (P) | mg/kg | 430         | 77.7                   | 53.7                 |  |  |  |  |  |  |  |
| Total Potassium (K)  | mg/kg | 1064        | 101                    | 13.2                 |  |  |  |  |  |  |  |
| Total Magnesium (Mg) | mg/kg | 68.4        | <10                    | <10                  |  |  |  |  |  |  |  |
| Total Copper (Cu)    | mg/kg | <0.2        | <0.2                   | <0.2                 |  |  |  |  |  |  |  |
| Total Zinc (Zn)      | mg/kg | <0.5        | <0.5                   | <0.5                 |  |  |  |  |  |  |  |
| Total Sulphur (S)    | mg/kg | 79.6        | 19.7                   | 15.4                 |  |  |  |  |  |  |  |
| Total Calcium (Ca)   | mg/kg | 517         | 144                    | 48.7                 |  |  |  |  |  |  |  |
| Total Lead (Pb)      | mg/kg | <0.5        | <0.5                   | <0.5                 |  |  |  |  |  |  |  |
| Total Cadmium (Cd)   | mg/kg | <0.01       | <0.01                  | <0.01                |  |  |  |  |  |  |  |
| Total Mercury (Hg)   | mg/kg | <0.05       | <0.05                  | <0.05                |  |  |  |  |  |  |  |
| Total Nickel (Ni)    | mg/kg | <0.2        | <0.2                   | <0.2                 |  |  |  |  |  |  |  |
| Total Chromium (Cr)  | mg/kg | <0.2        | <0.2                   | <0.2                 |  |  |  |  |  |  |  |
| Total Sodium (Na)    | mg/kg | 281         | 412                    | 33.3                 |  |  |  |  |  |  |  |
| pH [1:6]             |       | 4.26        | 4.64                   | 6.00                 |  |  |  |  |  |  |  |
| Total Arsenic (As)   | mg/kg | <0.5        | <0.5                   | <0.5                 |  |  |  |  |  |  |  |
| Oils,Fats and Grease | mg/kg | 480         | <200                   | 1040                 |  |  |  |  |  |  |  |

| Notes            |                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analysis Notes   | <p>The sample submitted was of adequate size to complete all analysis requested.</p> <p>The results as reported relate only to the item(s) submitted for testing.</p> <p>The results are presented on an as received basis unless otherwise stipulated.</p> |
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| ANALYTICAL NOTES |                                                                                                                                                                                                                                       |      |                       |              |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------|--------------|
| Report Number    | 57131-15                                                                                                                                                                                                                              | H665 | ANDY WHORTON          | Client 50026 |
| Date Received    | 22-JAN-2015                                                                                                                                                                                                                           |      | 4RECYCLING LTD        |              |
| Date Reported    | 03-FEB-2015                                                                                                                                                                                                                           |      | UNIT 1A CARADON WORKS |              |
| Project          | LIQUID WASTE                                                                                                                                                                                                                          |      | HAIGH PARK ROAD       |              |
| Reference        | 50026                                                                                                                                                                                                                                 |      | STOURTON              |              |
| Order Number     | 20140075                                                                                                                                                                                                                              |      | LEEDS LS10 1RT        |              |
| Notes            |                                                                                                                                                                                                                                       |      |                       |              |
| Reported by      | <i>J Doyle</i><br>Natural Resource Management, a trading division of Cawood Scientific Ltd.<br>Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS<br>Tel: 01344 886338<br>Fax: 01344 890972<br>email: enquiries@nrm.uk.com |      |                       |              |

# GLANBIA

## Llangefni, Anglesey

### Analysis of Whey

Date: 03 February 2015

Lab ref. SLUR30796

Application rate (t/ha) 125  
Application rate (t/acre) 50  
pH 4.26  
Dry solids (%) 3.92  
Conductivity 1:6 (µS/cm) 1014

### Nutrient Content

| TOTALS                                     | result | units | nutrient value |             | amount applied |              |
|--------------------------------------------|--------|-------|----------------|-------------|----------------|--------------|
|                                            |        |       | (kg/tonne)     | (units/ton) | ( kg/ha)       | (units/acre) |
| Nitrogen (N)                               | 0.08   | %     | 0.80           | 1.6         | 100            | 80           |
| Ammonium-N                                 | 10     | mg/kg | 0.01           | 0.0         | 1              | 1            |
| Phosphorus (P)                             | 430    | mg/kg | 0.43           | 0.9         | 54             | 43           |
| Phosphate (P <sub>2</sub> O <sub>5</sub> ) |        |       | 0.98           | 2.0         | 123            | 98           |
| Potassium (K)                              | 1064   | mg/kg | 1.06           | 2.1         | 133            | 106          |
| Potash (K <sub>2</sub> O)                  |        |       | 1.28           | 2.6         | 160            | 128          |
| Magnesium (Mg)                             | 68.4   | mg/kg | 0.07           | 0.1         | 9              | 7            |
| Magnesium (MgO)                            |        |       | 0.11           | 0.2         | 14             | 11           |
| Sulphur (S)                                | 79.6   | mg/kg | 0.08           | 0.2         | 10             | 8            |
| Sulphur (SO <sub>3</sub> )                 |        |       | 0.20           | 0.4         | 25             | 20           |
| Sodium (Na)                                | 281    | mg/kg | 0.28           | 0.6         | 35             | 28           |

### POTENTIALLY TOXIC ELEMENTS

| TOTALS   | result | units | concentration |           | amount applied |                     |
|----------|--------|-------|---------------|-----------|----------------|---------------------|
|          |        |       |               | (g/tonne) | (kg/ha)        | Limit<br>(kg/ha/yr) |
| Zinc     | 0.50   | mg/kg |               | 0.50      | 0.06           | 15.00               |
| Copper   | 0.20   | mg/kg |               | 0.20      | 0.03           | 7.50                |
| Nickel   | 0.20   | mg/kg |               | 0.20      | 0.03           | 3.00                |
| Lead     | 0.50   | mg/kg |               | 0.50      | 0.06           | 15.00               |
| Cadmium  | 0.01   | mg/kg |               | 0.01      | 0.00           | 0.15                |
| Chromium | 0.20   | mg/kg |               | 0.20      | 0.03           | 15.00               |
| Arsenic  | 0.50   | mg/kg |               | 0.50      | 0.00           | 0.70                |
| Mercury  | 0.05   | mg/kg |               | 0.05      | 0.00           | 0.10                |
|          |        |       |               |           |                |                     |

# GLANBIA

## Llangefni, Anglesey

### Analysis of DAF Sludge

Date: 03 February 2015

Lab ref. SLUR30798

Application rate (t/ha)            250  
Application rate (t/acre)        100  
pH                                        6.00  
Dry solids (%)                        0.29  
Conductivity 1:6 (µS/cm)        41.8

### Nutrient Content

| TOTALS                                     | result | units | nutrient value |             | amount applied |              |
|--------------------------------------------|--------|-------|----------------|-------------|----------------|--------------|
|                                            |        |       | (kg/tonne)     | (units/ton) | ( kg/ha)       | (units/acre) |
| Nitrogen (N)                               | 0.02   | %     | 0.20           | 0.4         | 50             | 40           |
| Ammonium-N                                 | 10     | mg/kg | 0.01           | 0.0         | 3              | 2            |
| Phosphorus (P)                             | 53.7   | mg/kg | 0.05           | 0.1         | 13             | 11           |
| Phosphate (P <sub>2</sub> O <sub>5</sub> ) |        |       | 0.12           | 0.2         | 31             | 24           |
| Potassium (K)                              | 13.2   | mg/kg | 0.01           | 0.0         | 3              | 3            |
| Potash (K <sub>2</sub> O)                  |        |       | 0.02           | 0.0         | 4              | 3            |
| Magnesium (Mg)                             | 10     | mg/kg | 0.01           | 0.0         | 3              | 2            |
| Magnesium (MgO)                            |        |       | 0.02           | 0.0         | 4              | 3            |
| Sulphur (S)                                | 15.4   | mg/kg | 0.02           | 0.0         | 4              | 3            |
| Sulphur (SO <sub>3</sub> )                 |        |       | 0.04           | 0.1         | 10             | 8            |
| Sodium (Na)                                | 33.3   | mg/kg | 0.03           | 0.1         | 8              | 7            |

### POTENTIALLY TOXIC ELEMENTS

| TOTALS   | result | units | concentration |           | amount applied |                     |
|----------|--------|-------|---------------|-----------|----------------|---------------------|
|          |        |       |               | (g/tonne) | (kg/ha)        | Limit<br>(kg/ha/yr) |
| Zinc     | 0.50   | mg/kg |               | 0.50      | 0.13           | 15.00               |
| Copper   | 0.20   | mg/kg |               | 0.20      | 0.05           | 7.50                |
| Nickel   | 0.20   | mg/kg |               | 0.20      | 0.05           | 3.00                |
| Lead     | 0.50   | mg/kg |               | 0.50      | 0.13           | 15.00               |
| Cadmium  | 0.01   | mg/kg |               | 0.01      | 0.00           | 0.15                |
| Chromium | 0.20   | mg/kg |               | 0.20      | 0.05           | 15.00               |
| Arsenic  | 0.50   | mg/kg |               | 0.50      | 0.00           | 0.70                |
| Mercury  | 0.05   | mg/kg |               | 0.05      | 0.00           | 0.10                |
|          |        |       |               |           |                |                     |

# GLANBIA

## Llangefni, Anglesey

### Analysis of Balance Tank

Date: 03 February 2015

Lab ref. SLUR30797

Application rate (t/ha)            250  
Application rate (t/acre)        100  
pH                                        4.64  
Dry solids (%)                        0.5  
Conductivity 1:6 (µS/cm)        412

### Nutrient Content

| TOTALS                                     | result | units | nutrient value |             | amount applied |              |
|--------------------------------------------|--------|-------|----------------|-------------|----------------|--------------|
|                                            |        |       | (kg/tonne)     | (units/ton) | ( kg/ha)       | (units/acre) |
| Nitrogen (N)                               | 0.03   | %     | 0.30           | 0.6         | 75             | 60           |
| Ammonium-N                                 | 10     | mg/kg | 0.01           | 0.0         | 3              | 2            |
| Phosphorus (P)                             | 77.7   | mg/kg | 0.08           | 0.2         | 19             | 16           |
| Phosphate (P <sub>2</sub> O <sub>5</sub> ) |        |       | 0.18           | 0.4         | 44             | 35           |
| Potassium (K)                              | 101    | mg/kg | 0.10           | 0.2         | 25             | 20           |
| Potash (K <sub>2</sub> O)                  |        |       | 0.12           | 0.2         | 30             | 24           |
| Magnesium (Mg)                             | 10     | mg/kg | 0.01           | 0.0         | 3              | 2            |
| Magnesium (MgO)                            |        |       | 0.02           | 0.0         | 4              | 3            |
| Sulphur (S)                                | 19.7   | mg/kg | 0.02           | 0.0         | 5              | 4            |
| Sulphur (SO <sub>3</sub> )                 |        |       | 0.05           | 0.1         | 12             | 10           |
| Sodium (Na)                                | 412    | mg/kg | 0.41           | 0.8         | 103            | 82           |

### POTENTIALLY TOXIC ELEMENTS

| TOTALS   | result | units | concentration |           | amount applied |                     |
|----------|--------|-------|---------------|-----------|----------------|---------------------|
|          |        |       |               | (g/tonne) | (kg/ha)        | Limit<br>(kg/ha/yr) |
| Zinc     | 0.50   | mg/kg |               | 0.50      | 0.13           | 15.00               |
| Copper   | 0.20   | mg/kg |               | 0.20      | 0.05           | 7.50                |
| Nickel   | 0.20   | mg/kg |               | 0.20      | 0.05           | 3.00                |
| Lead     | 0.50   | mg/kg |               | 0.50      | 0.13           | 15.00               |
| Cadmium  | 0.01   | mg/kg |               | 0.01      | 0.00           | 0.15                |
| Chromium | 0.20   | mg/kg |               | 0.20      | 0.05           | 15.00               |
| Arsenic  | 0.50   | mg/kg |               | 0.50      | 0.00           | 0.70                |
| Mercury  | 0.05   | mg/kg |               | 0.05      | 0.00           | 0.10                |
|          |        |       |               |           |                |                     |