



SWEP
PTY. LTD.

ABN 26 005 031 569

**ANALYTICAL
LABORATORIES**

Tel: (03) 9701 6007
Fax: (03) 9701 5712

REPORT ON SAMPLE OF LIME

FILE NO : 2310180249

DATE ISSUED : 6/10/2023

TOWNSVILLE LIME & GYPSUM
PO BOX 1590

CLIENT ID : TLG001
PHONE : 0427 008 856

INNISFAIL, QLD 4860

REFERENCE :

REFERENCE ID :

SAMPLE ID : AG - LIME

PHONE :

ANALYSIS REQUIRED : Full

DATE RECEIVED : 2/10/2023

| ITEMS | ABBREVIATION | UNIT | RESULTS |
|--------------------------|-----------------------------------|-------------|---------|
| TOTAL CALCIUM | Ca | % | 39.21 |
| TOTAL MAGNESIUM | Mg | % | 0.137 |
| TOTAL SODIUM | Na | % | 0.008 |
| TOTAL POTASSIUM | K | % | 0.0524 |
| TOTAL NITROGEN | N | ppm | 64 |
| TOTAL PHOSPHORUS | P | ppm | 0.012 |
| TOTAL IRON | Fe | ppm | 1350 |
| TOTAL MANGANESE | Mn | ppm | 117 |
| TOTAL ZINC | Zn | ppm | 4.47 |
| TOTAL COPPER | Cu | ppm | 2.34 |
| TOTAL COBALT | Co | ppm | 0.343 |
| TOTAL BORON | B | ppm | 3.71 |
| TOTAL SULPHUR | S | % | 0.004 |
| TOTAL MOLYBDENUM | Mo | ppm | 0.068 |
| CALCIUM CARBONATE | CaCO ₃ | % | 98 |
| | (Calculated from Total Calcium) | | |
| MAGNESIUM CARBONATE | MgCO ₃ | % | 0.48 |
| | (Calculated from Total Magnesium) | | |
| MATERIAL > 2mm | | % | Nil |
| MATERIAL 1.00 - 2.00 mm | | % | Nil |
| MATERIAL 0.85 - 1.00 mm | | % | Nil |
| MATERIAL 0.30 - 0.85 mm | | % | 36.255 |
| MATERIAL 0.075 - 0.30 mm | | % | 29.88 |
| MATERIAL < 0.075mm | | % | 33.86 |
| Electrical Conductivity | | µS/cm | 95.3 |
| pH | | (1:5 Water) | 8.88 |

| ITEMS | ABBREVIATION | UNIT | RESULTS |
|------------------------------|--------------|------|--------------|
| NEUTRALISING VALUE | NV | % | 100 |
| EFFECTIVE NEUTRALISING VALUE | ENV | % | 89.77 |
| MOISTURE CONTENT | MC | % | 1.57 |
| TOTAL MERCURY | Hg | ppm | Not required |
| TOTAL LEAD | Pb | ppm | Not required |
| TOTAL CADMIUM | Cd | ppm | Not required |
| TOTAL ARSENIC | As | ppm | Not required |

Notes on Neutralising Value

Neutralising Value is a measure of the amount of acidity a material can neutralise, or in the case of lime, its total liming value. An approximation of Neutralising Value can be made by $\text{CaCO}_3 + (2.5 \times \text{MgO})$.

Effective Neutralising Value is a calculated adjustment of the Neutralising Value, using the fineness of the lime. Lime retained on an 850 μm sieve (the coarser fraction) is estimated to be only 10% effective (fully utilised in the short term). Lime in the 300-850 μm sieve range (medium sized fraction) is estimated to be only 60% effective, while lime passing the 300 μm sieve (finer fraction) is estimated to be 100% effective.

Where a lime has a low Effective Neutralising Value (due to a high proportion of coarse fraction), further grinding should increase its effectiveness to change the pH.

| ITEMS | ANALYTICAL METHODS |
|-------------------------|---------------------------------|
| TOTAL CALCIUM | HCl Evaporation, ICPAES |
| TOTAL MAGNESIUM | HCl Evaporation, ICPAES |
| TOTAL SODIUM | HCl Evaporation, ICPAES |
| TOTAL POTASSIUM | HCl Evaporation, ICPAES |
| TOTAL NITROGEN | Dumas method, LECO |
| TOTAL PHOSPHORUS | HCl Evaporation, ICPAES |
| TOTAL IRON | HCl Evaporation, ICPAES |
| TOTAL MANGANESE | HCl Evaporation, ICPAES |
| TOTAL ZINC | HCl Evaporation, ICPAES |
| TOTAL COPPER | HCl Evaporation, ICPAES |
| TOTAL COBALT | HCl Evaporation, ICPAES |
| TOTAL BORON | HCl Evaporation, ICPAES |
| TOTAL SULPHUR | HCl Evaporation, ICPAES |
| TOTAL MOLYBDENUM | HCl Evaporation, ICPAES |
| CALCIUM CARBONATE | Calculated from Total Calcium |
| MAGNESIUM CARBONATE | Calculated from Total Magnesium |
| Electrical Conductivity | Method 3A1, water extract* |
| pH | Method 4A1, water suspension* |
| MOISTURE CONTENT | Gravimetric method |

* Rayment, G.E. & Lyons, D.J. (2011). Soil Chemical Methods - Australasia. CSIRO Publishing, 150 Oxford Street, Collingwood Vic 3066, Australia.