PHOSPHORUS SORPTION CAPACITY

1 sample supplied by JR Richards & Sons Pty Ltd on 26/11/2021 - Lab Job No. M3914

Analysis requested by Indika Kelasekara. - **Customer Reference: Soil Irrigation Area**

15-19 Brickworks Lane SOUTH GRAFTON NSW 2461

	SAMPLE 1 SOIL-IRRIGATION AREA-DROPP
Job No.	*M3914/1*
Native NaOH Phosphorus (mg/kg P)	247
Residual phosphorus remaining in solution from the initial phosphate phosphorus	
Initial Phosphorus concentration (ppm P)	**28.01**
72 hour - 3 Day (ppm P)	23.53
120 hour - 5 Day (ppm P)	23.22
168 hour - 7 Day (ppm P)	22.41
Equilibrium Phosphorus (ppm P)	21.87

Notes:

1. ppm = mg/kg dried soil
2. Insitu P determined using 0.1 M NaOH and shaking for 24 h before determining phosphate
3. Soils were crushed using a ceramic grinding head and mill; five 1 g subsamples of each soil were used to which 40 mL of 0.1 M NaCl with 30 ppm phosphorus was added to each. The samples were shaken on an orbital shaker
4. All results as dry weight DW - soils were dried at 60°C for 48 h prior to crushing and analysis.
5. Phosphorus Capacity method from Ryden and Pratt, 1980.
6. Analysis conducted between sample arrival date and reporting date.
7. .. Denotes not requested.
8. This report is not to be reproduced except in full.
9. All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
10. This report was issued on 17/12/2021

NATA
WORLD RECOGNISED ACCREDITATION
Accreditation No. 14960
Accredited for compliance with ISO/IEC 17025 - Testing

Checked:.....

PHOSPHORUS SORPTION TRIAL

1 sample supplied by JR Richards & Sons Pty Ltd on 26/11/2021 - Lab Job No. M3914

Analysis requested by Indika Kelasekara. - Customer Reference: Soil Irrigation Area

15-19 Brickworks Lane SOUTH GRAFTON NSW 2461

Calculations for Equilibrium Absorption Maximum for Soil provided

I.D.	JOB NO.	Equilibrium P mg P/L (in solution)	Added P mg P/L	P Sorb at Equil. mg P/kg	Native P mg P/kg	Equilibrium P Sorption Level µg P/g soil	Divide Θ (from Table)	Equilibrium Absorption Maximum (B) µg P/g soil
SOIL-IRRIGATION AREA-DROPP	**M3914/1**	21.9	28.01	246	247	493	0.91	**543**

Calculations for phosphorus sorption capacity

	JOB NO.	Equilibrium Absorption Maximum (B) µg P/g soil	multiply by theta of wastewater to be applie (=X)	minus the native P (=Y)	**kg P sorption / hectare (to a depth of 15 cm)** (1.95 is a correction factor for density, etc	**kg P sorption / hectare (to a depth of 100 cm)** (1.95 is a correction factor for density, etc)
SOIL-IRRIGATION AREA-DROPP	*M3914/1*	543	(=B x theta)	(=X -native P)	(=Y x 1.95)	(=Y x 1.95 x 100/15)

EXAMPLE 1 - Calculations for phosphorus sorption capacity using a wastewater phosphorus of 15 mg/L P

	JOB NO.	Equilibrium Absorption Maximum (B) µg P/g soil	multiply by theta of wastewater to be applie (ie. 0.84)	minus the native P (=Y)	**kg P sorption / hectare (to a depth of 15 cm)** (1.95 is a correction factor for density, etc	**kg P sorption / hectare (to a depth of 100 cm)** (1.95 is a correction factor for density, etc)
SOIL-IRRIGATION AREA-DROPP	*M3914/1*	543	456	209	**408**	**2,717**

Checked:.....