

Environment Monitoring Results



Environment Protection Licences No	6033
Link To Licence on EPA Website	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32671&SYSUID=1&LICID=6033
Licencees Name	Rivalea (Australia) Pty Ltd
Licencees Address	Balpool Station Via, Moulamein, NSW 2733
Substance Monitored	SOIL
Monitoring Frequency	Yearly
Reporting period	11/02/2011 -11/02/2015
Published Date	11/03/2015

Sampling Date	Monitoring Point	ALUMINIUM - KCL EX (mg/kg)	Aluminium Saturation %	Ammonium Nitrogen mg/Kg	CALCIUM (% CATIONS)
4/05/2011	PADDOCK 14 (0-10CM)				40.00
	PADDOCK 14 (30-40CM)				42.00
	PADDOCK 7 (0-10CM)				60.00
	PADDOCK 7 (30-40CM)				49.00
	PADDOCK 9A 9B 10 (0-10CM)				64.00
	PADDOCK 9A 9B 10 (30-40CM)	0.00	0.40		50.00
9/07/2012	PADDOCK 21 (0-10CM)				51.00
	PADDOCK 21 (30-40CM)				54.00
	PADDOCK 22 (0-10CM)	11.00	0.80		60.00
	PADDOCK 22 (30-40CM)				72.00
	PADDOCK 31 (0-10CM)				63.00
	PADDOCK 31 (30-40CM)				64.00
	PADDOCK 8 (0-10CM)				47.00
	PADDOCK 8 (30-40CM)				58.00
5/06/2013	PADDOCK 31 (0-10CM)			3.20	
2/07/2013	PADDOCK 21 (0-10CM)	0.00	0.00	2.40	
	PADDOCK 21 (30-40CM)	0.00	0.00	1.00	
	PADDOCK 22 (0-10CM)	0.00	0.00	1.40	
	PADDOCK 22 (30-40CM)	0.00	0.00	0.60	
	PADDOCK 31 (0-10CM)	0.00	0.00	3.20	
	PADDOCK 31 (30-40CM)	0.00	0.00	1.70	
	PADDOCK 7 (0-10CM)	0.00	0.00	1.50	
	PADDOCK 7 (30-40CM)	0.00	0.00	1.50	
	PADDOCK 8 (0-10CM)	0.00	0.00	1.50	
	PADDOCK 8 (30-40CM)	0.00	0.00	0.90	

Environment Monitoring Results



CALCIUM (%)	CALCIUM (Meq/100g)	CALCIUM:MAGNESIUM RATIO	Cation Exchange Capacity (Meq/100g)	Chloride mg/kg	DRY AGGREGATE SLAKING	EC (uS/cm)	EX CALCIUM (MEq/100g)
		1.10	27.30	130.00		420.00	11.00
		1.40	23.70	320.00		500.00	10.00
		3.50	21.60	190.00		450.00	13.00
		4.40	28.80	960.00		1240.00	14.00
		2.50	26.70	34.00		300.00	17.00
		1.70	26.10	150.00		310.00	13.00
		2.40	9.01	250.00	0.00	390.00	4.60
		1.50	13.80	48.00	0.00	80.00	7.50
		2.60	14.90	72.00	0.00	290.00	9.00
		3.50	30.60	120.00	0.00	290.00	22.00
		3.00	19.00	120.00	0.00	440.00	12.00
		2.30	20.40	30.00	0.00	200.00	13.00
		1.30	17.90	50.00	0.00	200.00	8.50
		2.60	36.10	250.00	0.00	500.00	21.00
			20.70	280.00		730.00	
56.00	7.00	2.20	12.50	170.00	0.00	540.00	
65.00	11.00	2.50	16.80	170.00	0.00	330.00	
62.00	5.50	2.80	8.91	34.00	0.00	190.00	
57.00	6.00	1.80	10.60	65.00	0.00	160.00	
53.00	11.00	1.70	20.70	280.00	0.00	730.00	
42.00	8.00	1.10	19.00	190.00	0.00	300.00	
54.00	10.00	1.80	18.60	230.00	0.00	600.00	
46.00	9.50	1.40	20.80	230.00	0.00	380.00	
42.00	10.00	1.10	23.80	330.00	0.00	530.00	
45.00	10.00	1.40	22.20	140.00	0.00	320.00	

Environment Monitoring Results



EX MAGNESIUM (MEq/100g)	EX POTASSIUM (MEq/100g)	EX SODIUM (MEq/100g)	Exchangeable Aluminium (Meq/100g)	Loveday-Pyle Dispersion Index	MAGNESIUM (% CATIONS)	MAGNESIUM (%)	NITRATE (mgN/kg)
9.90	1.60	4.80		12.00	36.00		50.00
7.40	1.10	5.20		15.00	31.00		15.00
3.70	1.20	3.70		15.00	17.00		11.00
3.20	0.64	11.00		11.00	11.00		12.00
6.70	1.50	1.50		13.00	25.00		6.20
7.60	0.61	4.80	0.10	15.00	29.00		3.40
1.90	1.90	0.61		2.00	21.00		33.00
5.10	0.31	0.91		6.00	37.00		2.30
3.50	1.90	0.37	0.12	1.00	23.00		62.00
6.30	0.51	1.80		2.00	21.00		16.00
4.00	2.40	0.57		2.00	21.00		94.00
5.60	0.50	1.30		0.00	27.00		9.60
6.60	1.60	1.20		8.00	37.00		17.00
8.20	0.79	6.10		14.00	23.00		3.30
				9.00			220.00
3.20	1.70	0.61	0.00	9.00		26.00	170.00
4.40	0.27	1.10	0.00	10.00		26.00	38.00
2.00	1.20	0.21	0.00	10.00		22.00	49.00
3.30	0.15	1.20	0.00	10.00		31.00	18.00
6.30	2.00	1.40	0.00	9.00		30.00	220.00
7.20	0.55	3.30	0.00	12.00		38.00	20.00
5.60	2.10	0.87	0.00	9.00		30.00	160.00
6.70	0.52	4.10	0.00	13.00		32.00	18.00
9.10	1.90	2.80	0.00	11.00		38.00	42.00
7.20	0.77	4.20	0.00	13.00		32.00	8.60

Environment Monitoring Results



ORGANIC CARBON %	pH - CaCl2 1:5	pH - WATER 1:5	PHOSPHORUS - COLWELL (mg/kg)	Phosphorus Buffer Index (PBI)	POTASSIUM (% CATIONS)	POTASSIUM M (%)	POTASSIUM M-AVAILABLE (mg/kg)
2.20	7.20	8.10	230.00	82.00	5.90		630.00
1.20	7.50	8.40	95.00	73.00	4.60		420.00
1.20	8.10	9.00	110.00	71.00	5.60		470.00
0.65	8.90	9.70	56.00	79.00	2.20		250.00
2.00	7.20	7.80	94.00	67.00	5.60		590.00
1.20	7.60	8.70	23.00	68.00	2.30		240.00
1.80	6.10	6.60	190.00	38.00	21.00		740.00
0.47	6.80	8.00	16.00	44.00	2.20		120.00
2.00	6.20	6.60	140.00	37.00	13.00		740.00
0.48	8.20	8.90	20.00	52.00	1.70		200.00
3.70	6.20	6.60	270.00	45.00	13.00		930.00
0.49	8.00	8.80	22.00	40.00	2.50		190.00
2.10	6.50	7.40	190.00	47.00	8.90		640.00
0.65	8.60	9.40	25.00	50.00	2.20		310.00
4.20	5.90	6.20	260.00	55.00			
1.60	5.60	6.00	150.00	34.00		14.00	650.00
160.00	8.10	8.70	24.00	37.00		1.60	110.00
1.40	6.20	6.80	150.00	30.00		13.00	480.00
0.39	7.30	8.30	24.00	26.00		1.40	58.00
4.20	5.90	6.20	260.00	55.00		9.70	790.00
0.49	7.00	8.10	28.00	38.00		2.90	220.00
2.90	5.70	6.10	190.00	39.00		11.00	820.00
0.31	7.70	8.70	34.00	26.00		2.50	200.00
2.70	6.60	7.20	440.00	90.00		8.00	740.00
0.78	7.50	8.50	140.00	55.00		3.50	300.00

Environment Monitoring Results



POTASSIUM: MAGNESIUM RATIO	REMOULDED AGGREGATE SLAKING 2 hrs	SODIUM %	SODIUM (% CATIONS)	SODIUM (%)	Total Nitrogen (N) mg/Kg	Total Phosphorus (mg/kg)
0.20	0.00	18.00			2400.00	900.00
0.20	0.00	22.00			800.00	300.00
0.30	0.00	17.00			1100.00	600.00
0.20	0.00	38.00			400.00	300.00
0.20	0.00	5.60			2000.00	400.00
0.10	0.00		18.00		500.00	300.00
1.00			6.80		1800.00	600.00
0.10			6.60		600.00	200.00
0.50			2.50		2000.00	500.00
0.10			5.90		700.00	200.00
0.60			3.00		3200.00	1000.00
0.10			6.40		700.00	200.00
0.20			6.70		2500.00	800.00
0.10			17.00		600.00	100.00
					4200.00	
0.50			0.00	4.90	200.00	100.00
0.10			0.00	6.50	50.00	20.00
0.60			0.00	2.40	160.00	80.00
0.10			0.00	11.00	70.00	20.00
0.30			0.00	6.80	420.00	110.00
0.10			0.00	17.00	60.00	20.00
0.40			0.00	4.70	50.00	100.00
0.10			0.00	20.00	50.00	20.00
0.20			0.00	12.00	300.00	240.00
0.10			0.00	19.00	110.00	90.00

Environment Monitoring Results



Average					
Monitoring Point	ALUMINIUM-KCL EX (mg/kg)	Aluminium Saturation %	Ammonium Nitrogen mg/Kg	CALCIUM (% CATIONS)	CALCIUM (%)
PADDOCK 14 (0-10CM)				40.00	
PADDOCK 14 (30-40CM)				42.00	
PADDOCK 21 (0-10CM)	0.00	0.00	2.40	51.00	56.00
PADDOCK 21 (30-40CM)	0.00	0.00	1.00	54.00	65.00
PADDOCK 22 (0-10CM)	5.50	0.40	1.40	60.00	62.00
PADDOCK 22 (30-40CM)	0.00	0.00	0.60	72.00	57.00
PADDOCK 31 (0-10CM)	0.00	0.00	3.20	63.00	53.00
PADDOCK 31 (30-40CM)	0.00	0.00	1.70	64.00	42.00
PADDOCK 7 (0-10CM)	0.00	0.00	1.50	60.00	54.00
PADDOCK 7 (30-40CM)	0.00	0.00	1.50	49.00	46.00
PADDOCK 8 (0-10CM)	0.00	0.00	1.50	47.00	42.00
PADDOCK 8 (30-40CM)	0.00	0.00	0.90	58.00	45.00
PADDOCK 9A 9B 10 (0-10CM)				64.00	
PADDOCK 9A 9B 10 (30-40CM)	0.00	0.40		50.00	

Environment Monitoring Results



CALCIUM (Meq/100g)	CALCIUM:MAGNESIUM RATIO	Cation Exchange Capacity (Meq/100g)	Chloride mg/kg	DRY AGGREGATE SLAKING	EC (uS/cm)	EX CALCIUM (MEq/100g)
	1.10	27.30	130.00		420.00	11.00
	1.40	23.70	320.00		500.00	10.00
7.00	2.30	10.76	210.00	0.00	465.00	4.60
11.00	2.00	15.30	109.00	0.00	205.00	7.50
5.50	2.70	11.90	53.00	0.00	240.00	9.00
6.00	2.65	20.60	92.50	0.00	225.00	22.00
11.00	2.35	20.13	226.67	0.00	633.33	12.00
8.00	1.70	19.70	110.00	0.00	250.00	13.00
10.00	2.65	20.10	210.00	0.00	525.00	13.00
9.50	2.90	24.80	595.00	0.00	810.00	14.00
10.00	1.20	20.85	190.00	0.00	365.00	8.50
10.00	2.00	29.15	195.00	0.00	410.00	21.00
	2.50	26.70	34.00		300.00	17.00
	1.70	26.10	150.00		310.00	13.00

Environment Monitoring Results



EX MAGNESIUM (MEq/100g)	EX POTASSIUM (MEq/100g)	EX SODIUM (MEq/100g)	Exchangeable Aluminium (Meq/100g)	Loveday-Pyle Dispersion Index	MAGNESIUM (% CATIONS)	MAGNESIUM (%)
9.90	1.60	4.80		12.00	36.00	
7.40	1.10	5.20		15.00	31.00	
2.55	1.80	0.61	0.00	5.50	21.00	26.00
4.75	0.29	1.01	0.00	8.00	37.00	26.00
2.75	1.55	0.29	0.06	5.50	23.00	22.00
4.80	0.33	1.50	0.00	6.00	21.00	31.00
5.15	2.20	0.98	0.00	6.67	21.00	30.00
6.40	0.53	2.30	0.00	6.00	27.00	38.00
4.65	1.65	2.29	0.00	12.00	17.00	30.00
4.95	0.58	7.55	0.00	12.00	11.00	32.00
7.85	1.75	2.00	0.00	9.50	37.00	38.00
7.70	0.78	5.15	0.00	13.50	23.00	32.00
6.70	1.50	1.50		13.00	25.00	
7.60	0.61	4.80	0.10	15.00	29.00	

Environment Monitoring Results



NITRATE (mgN/kg)	ORGANIC CARBON %	pH - CaCl2 1:5	pH - WATER 1:5	PHOSPHORU S - COLWELL (mg/kg)	Phosphorus Buffer Index (PBI)	POTASSIUM (% CATIONS)
50.00	2.20	7.20	8.10	230.00	82.00	5.90
15.00	1.20	7.50	8.40	95.00	73.00	4.60
101.50	1.70	5.85	6.30	170.00	36.00	21.00
20.15	80.23	7.45	8.35	20.00	40.50	2.20
55.50	1.70	6.20	6.70	145.00	33.50	13.00
17.00	0.43	7.75	8.60	22.00	39.00	1.70
178.00	4.03	6.00	6.33	263.33	51.67	13.00
14.80	0.49	7.50	8.45	25.00	39.00	2.50
85.50	2.05	6.90	7.55	150.00	55.00	5.60
15.00	0.48	8.30	9.20	45.00	52.50	2.20
29.50	2.40	6.55	7.30	315.00	68.50	8.90
5.95	0.71	8.05	8.95	82.50	52.50	2.20
6.20	2.00	7.20	7.80	94.00	67.00	5.60
3.40	1.20	7.60	8.70	23.00	68.00	2.30

Environment Monitoring Results



POTASSIUM (%)	POTASSIUM-AVAILABLE (mg/kg)	POTASSIUM:MAGNESIUM RATIO	REMOULDED AGGREGATE SLAKING 2 hrs	SODIUM %	SODIUM (% CATIONS)	SODIUM (%)
	630.00	0.20	0.00	18.00		
	420.00	0.20	0.00	22.00		
14.00	695.00	0.75			3.40	4.90
1.60	115.00	0.10			3.30	6.50
13.00	610.00	0.55			1.25	2.40
1.40	129.00	0.10			2.95	11.00
9.70	860.00	0.45			1.50	6.80
2.90	205.00	0.10			3.20	17.00
11.00	645.00	0.35	0.00	17.00	0.00	4.70
2.50	225.00	0.15	0.00	38.00	0.00	20.00
8.00	690.00	0.20			3.35	12.00
3.50	305.00	0.10			8.50	19.00
	590.00	0.20	0.00	5.60		
	240.00	0.10	0.00		18.00	

Environment Monitoring Results



Total Nitrogen (N) mg/Kg	Total Phosphorus (mg/kg)
2400.00	900.00
800.00	300.00
1000.00	350.00
325.00	110.00
1080.00	290.00
385.00	110.00
2606.67	555.00
380.00	110.00
575.00	350.00
225.00	160.00
1400.00	520.00
355.00	95.00
2000.00	400.00
500.00	300.00