

Environment Monitoring Results



Environment Protection Licences No	1399
Link To Licence on EPA Website	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32670&SYSUID=1&LICID=1399
Licencees Name	Rivalea (Australia) Pty Ltd
Licencees Address	Redlands Road Corowa NSW 2646
Substance Monitored	SOIL
Monitoring Frequency	Yearly
Reporting period	30/10/2012 -30/10/2016
Published Date	30/11/2016

Sampling Date	Monitoring Point	ALUMINIUM - KCL EX (mg/kg)	Aluminium Saturation %	Ammonium Nitrogen mg/Kg	AVAILABLE POTASSIUM (mg/kg)
26/07/2013	CENTRE PIVOT 1 (0-10CM) (MP 7)	0.00	0.00	5.00	820.00
	CENTRE PIVOT 1 (30-40CM) (MP 7)	0.00	0.00	1.50	1100.00
	CENTRE PIVOT 17 (0-10CM) (MP 22)	9.00	1.30	1.90	620.00
	CENTRE PIVOT 17 (30-40CM) (MP 22)	0.00	0.00	0.80	560.00
	CENTRE PIVOT 2 (0-10CM) (MP 9)	0.00	0.00	2.50	1000.00
	CENTRE PIVOT 23 (0-10CM) (MP 23)	9.00	1.50	2.10	680.00
	CENTRE PIVOT 23 (30-40CM) (MP 23)	0.00	0.00	1.00	640.00
	CENTRE PIVOT 3 (0-10CM) (MP 17)	9.00	1.20	1.60	1000.00
	CENTRE PIVOT 3 (30-40CM) (MP 17)	0.00	0.00	0.70	880.00
	CENTRE PIVOT 4 (0-10CM) (MP 18)	0.00	0.00	3.20	1200.00
	CENTRE PIVOT 4 (30-40CM) (MP 18)	0.00	0.00	0.80	1600.00
	CENTRE PIVOT 5 (0-10CM) (MP 19)	0.00	0.00	5.70	1700.00
	CENTRE PIVOT 5 (30-40 CM) (MP 19)	9.00	0.90	1.30	970.00
	CENTRE PIVOT 6 (0-10CM) (MP 20)	0.00	0.00	2.10	1100.00
	CENTRE PIVOT 6 (30-40CM) (MP 20)	0.00	0.00	0.70	1200.00
CENTRE PIVOT 7 (0-10CM) (MP 21)	9.00	0.90	1.90	1400.00	
18/08/2014	CENTRE PIVOT 1 (0-10CM) (MP 7)	0.00	0.00	1.00	1300.00
	CENTRE PIVOT 1 (30-40CM) (MP 7)	0.00	0.00	0.60	1000.00
	CENTRE PIVOT 17 (0-10CM) (MP 22)	28.00	5.90	3.60	580.00

Environment Monitoring Results



CALCIUM (%)	CALCIUM (Meq/100g)	CALCIUM:MAGNESIUM RATIO	Cation Exchange Capacity (Meq/100g)	Chloride mg/kg	DRY AGGREGATE SLAKING	Elect Conductivity (EC) (uS/cm)	EX MAGNESIUM (MEq/100g)
59.00	5.00	3.80	8.53	13.00	0.00	130.00	1.30
35.00	3.00	1.40	8.48	37.00	0.00	130.00	2.10
61.00	4.80	4.00	7.87	18.00	0.00	130.00	1.20
51.00	5.50	1.70	10.80	22.00	0.00	80.00	3.20
51.00	5.50	2.90	50.00	120.00	0.00	240.00	1.90
55.00	3.60	3.60	6.53	23.00	0.00	110.00	0.99
44.00	5.00	1.30	11.40	30.00	0.00	100.00	4.00
49.00	4.20	3.00	8.61	24.00	0.00	130.00	1.40
34.00	4.00	0.90	11.80	75.00	0.00	160.00	4.50
54.00	5.50	3.70	10.20	11.00	0.00	130.00	1.50
50.00	7.00	3.30	14.10	66.00	0.00	200.00	2.10
41.00	5.50	2.20	13.40	160.00	0.00	410.00	2.50
38.00	4.40	1.20	11.70	170.00	0.00	300.00	3.60
56.00	6.00	3.50	10.70	10.00	0.00	120.00	1.70
37.00	3.30	1.80	8.94	58.00	0.00	220.00	1.80
43.00	4.90	2.60	11.30	140.00	0.00	430.00	1.90
42.00	4.30	2.50	10.30	280.00	0.00	430.00	1.70
39.00	3.10	2.60	8.00	240.00	0.00	350.00	1.20
50.00	2.60	3.90	5.22	74.00	0.00	110.00	0.67

Environment Monitoring Results



EX POTASSIUM (MEq/100g)	EX SODIUM (MEq/100g)	Exchangeable Aluminium (Meq/100g)	Loveday-Pyle Dispersion Index	MAGNESIUM (%)	NITRATE (mgN/kg)	ORGANIC CARBON %	pH - CaCl2 1:5
2.10	0.13	0.00	11.00	15.00	22.00	1.80	5.50
2.90	0.48	0.00	13.00	25.00	14.00	0.26	7.10
1.60	0.17	0.10	10.00	15.00	42.00	1.60	5.00
1.40	0.65	0.00	14.00	30.00	11.00	0.44	6.10
2.60	0.83	0.00	10.00	18.00	40.00	1.50	5.90
1.70	0.14	0.10	10.00	15.00	28.00	2.00	4.70
1.60	0.78	0.00	14.00	35.00	13.00	0.44	6.00
2.60	0.31	0.10	11.00	16.00	28.00	1.40	5.40
2.30	1.00	0.00	13.00	38.00	26.00	0.29	6.20
3.00	0.15	0.00	11.00	15.00	19.00	1.90	5.70
4.00	0.96	0.00	15.00	15.00	23.00	0.88	6.90
4.40	0.96	0.00	10.00	19.00	71.00	2.10	6.20
2.50	1.10	0.10	12.00	31.00	53.00	0.40	5.40
2.90	0.10	0.00	11.00	16.00	13.00	2.30	5.50
3.10	0.74	0.00	15.00	20.00	8.80	0.18	8.10
3.60	0.78	0.10	9.00	17.00	140.00	1.80	5.10
3.30	1.00	0.00	4.00	17.00	76.00	1.80	6.10
2.60	1.10	0.00	10.00	15.00	61.00	0.21	7.00
1.50	0.14	0.31	7.00	13.00	14.00	1.30	4.50

Environment Monitoring Results



pH - WATER 1:5	PHOSPHORUS - COLWELL (mg/kg)	Phosphorus (mg/kg)	Phosphorus Buffer Index (PBI)	POTASSIUM (%)	POTASSIUM:MAGNESIUM RATIO	SODIUM (% CATIONS)	SODIUM (%)
6.50	140.00	60.00	55.00	25.00	1.60	0.00	1.50
8.10	13.00	20.00	110.00	34.00	1.40	0.00	5.70
5.80	36.00	40.00	69.00	20.00	1.30	2.20	0.00
7.20	10.00	30.00	130.00	13.00	0.40	0.00	6.00
6.80	0.14	74.00	110.00	24.00	1.40	0.00	7.70
5.70	46.00	40.00	52.00	26.00	1.70	2.10	0.00
7.10	7.00	20.00	150.00	14.00	0.40	0.00	6.80
6.50	35.00	40.00	53.00	30.00	1.90	3.60	0.00
7.20	7.00	20.00	110.00	19.00	0.50	0.00	8.50
6.70	240.00	90.00	67.00	29.00	2.00	0.00	1.50
8.00	27.00	30.00	100.00	28.00	1.90	0.00	6.80
6.90	170.00	60.00	70.00	33.00	1.80	0.00	7.20
6.20	9.00	20.00	100.00	21.00	0.70	9.40	0.00
6.60	290.00	110.00	100.00	27.00	1.70	0.00	0.93
9.10	40.00	0.03	77.00	35.00	1.70	0.00	8.30
5.80	86.00	50.00	57.00	32.00	1.90	6.90	0.00
6.80	210.00	600.00	50.00	32.00	1.90	0.00	9.70
7.70	12.00	200.00	76.00	33.00	2.20	0.00	14.00
5.40	100.00	400.00	66.00	29.00	2.20	2.70	0.00

Environment Monitoring Results



Total Nitrogen (N) mg/Kg
160.00
400.00
160.00
60.00
140.00
160.00
50.00
120.00
400.00
190.00
60.00
210.00
50.00
240.00
40.00
180.00
1800.00
400.00
1000.00

Environment Monitoring Results



18/08/2014	CENTRE PIVOT 17 (30-40CM) (MP 22)	0.00	0.00	0.80	230.00
	CENTRE PIVOT 2 (0-10CM) (MP 9)	0.00	0.00	1.50	1100.00
	CENTRE PIVOT 23 (0-10CM) (MP 23)	11.00	2.20	2.00	390.00
	CENTRE PIVOT 23 (30-40CM) (MP 23)	0.00	0.00	1.00	250.00
	CENTRE PIVOT 3 (0-10CM) (MP 17)	9.00	1.40	1.10	780.00
	CENTRE PIVOT 3 (30-40CM) (MP 17)	0.00	0.00	0.60	620.00
	CENTRE PIVOT 4 (0-10CM) (MP 18)	0.00	0.00	1.70	830.00
	CENTRE PIVOT 4 (30-40CM) (MP 18)	0.00	0.00	0.80	1300.00
	CENTRE PIVOT 5 (0-10CM) (MP 19)	26.00	4.10	2.90	530.00
	CENTRE PIVOT 5 (30-40 CM) (MP 19)	9.00	1.00	0.60	130.00
	CENTRE PIVOT 6 (0-10CM) (MP 20)	9.00	1.10	1.40	1100.00
	CENTRE PIVOT 6 (30-40CM) (MP 20)	0.00	0.00	0.60	710.00
	CENTRE PIVOT 7 (0-10CM) (MP 21)	9.00	1.10	1.30	1300.00
	26/10/2015	CENTRE PIVOT 17 (30-40CM) (MP 22)			
CENTRE PIVOT 23 (30-40CM) (MP 23)					
CENTRE PIVOT 3 (30-40CM) (MP 17)					
CENTRE PIVOT 4 (30-40CM) (MP 18)					
CENTRE PIVOT 5 (30-40 CM) (MP 19)					
CENTRE PIVOT 6 (30-40CM) (MP 20)					

Average					
Monitoring Point	ALUMINIUM-KCL EX (mg/kg)	Aluminium Saturation %	Ammonium Nitrogen mg/Kg	AVAILABLE POTASSIUM (mg/kg)	CALCIUM (%)
CENTRE PIVOT 1 (0-10CM) (MP 7)	0.00	0.00	3.00	1060.00	50.50
CENTRE PIVOT 1 (30-40CM) (MP 7)	0.00	0.00	1.05	1050.00	37.00
CENTRE PIVOT 17 (0-10CM) (MP 22)	18.50	3.60	2.75	600.00	55.50
CENTRE PIVOT 17 (30-40CM) (MP 22)	0.00	0.00	0.80	395.00	39.50
CENTRE PIVOT 2 (0-10CM) (MP 9)	0.00	0.00	2.00	1050.00	50.00

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28.00	3.90	0.60	14.10	160.00	0.00	220.00	6.80
49.00	4.90	2.60	10.10	27.00	0.00	150.00	1.90
62.00	3.30	3.60	5.35	10.00	0.00	70.00	6.80
45.00	3.70	1.00	8.16	10.00	0.00	40.00	3.60
50.00	3.50	2.90	6.95	15.00	0.00	90.00	1.20
44.00	3.60	1.80	8.11	88.00	0.00	120.00	2.00
60.00	5.00	4.50	8.36	10.00	0.00	70.00	1.10
34.00	2.90	1.60	8.60	23.00	0.00	110.00	1.80
52.00	3.70	2.30	7.12	10.00	0.00	50.00	1.60
24.00	2.40	0.50	9.82	11.00	0.00	60.00	4.80
48.00	4.50	3.00	9.33	43.00	0.00	140.00	1.50
26.00	1.80	0.70	7.00	63.00	0.00	120.00	2.70
42.00	4.00	2.90	9.42	140.00	0.00	300.00	1.40
						60.00	
						40.00	
						120.00	
						350.00	
						50.00	
						30.00	

CALCIUM (Meq/100g)	CALCIUM:MAGNESIUM RATIO	Cation Exchange Capacity (Meq/100g)	Chloride mg/kg	DRY AGGREGATE SLAKING	Elect Conductivity (EC) (uS/cm)	EX MAGNESIUM (MEq/100g)
4.65	3.15	9.41	146.50	0.00	280.00	1.50
3.05	2.00	8.24	138.50	0.00	240.00	1.65
3.70	3.95	6.54	46.00	0.00	120.00	0.94
4.70	1.15	12.45	91.00	0.00	120.00	5.00
5.20	2.75	30.05	73.50	0.00	195.00	1.90

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0.60	2.80	0.00	16.00	48.00	9.20	0.32	6.10
2.90	0.42	0.00	6.00	19.00	25.00	2.30	5.80
0.99	0.03	0.12	4.00	17.00	15.00	1.30	4.60
0.64	0.22	0.00	5.00	44.00	5.60	0.23	5.80
2.00	0.15	0.10	7.00	17.00	24.00	1.50	5.10
1.60	0.91	0.00	16.00	25.00	15.00	0.25	7.00
2.10	0.16	0.00	8.00	13.00	8.70	1.50	5.70
3.20	0.70	0.00	16.00	21.00	4.00	0.27	5.90
1.40	0.13	0.29	7.00	22.00	4.90	2.00	4.50
0.32	2.20	0.10	16.00	49.00	1.00	0.20	5.30
2.90	0.33	0.10	8.00	16.00	33.00	1.70	5.40
1.80	0.70	0.00	16.00	39.00	21.00	0.23	5.90
3.40	0.52	0.10	4.00	15.00	78.00	1.80	4.90
					6.00		
					3.00		
					19.00		
					17.00		
					11.00		
					4.00		

EX POTASSIUM (MEq/100g)	EX SODIUM (MEq/100g)	Exchangeable Aluminium (Meq/100g)	Loveday-Pyle Dispersion Index	MAGNESIUM (%)	NITRATE (mgN/kg)	ORGANIC CARBON %
2.70	0.56	0.00	7.50	16.00	49.00	1.80
2.75	0.79	0.00	11.50	20.00	37.50	0.23
1.55	0.16	0.21	8.50	14.00	28.00	1.45
1.00	1.72	0.00	15.00	39.00	8.73	0.38
2.75	0.62	0.00	8.00	18.50	32.50	1.90

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7.20	7.00	100.00	120.00	4.30	0.10	0.00	20.00
6.80	160.00	600.00	62.00	29.00	1.50	0.00	4.20
5.40	180.00	700.00	70.00	19.00	1.10	0.49	0.00
6.90	8.00	300.00	150.00	7.80	0.20	0.00	2.70
6.20	34.00	400.00	39.00	29.00	1.70	2.20	0.00
8.10	6.00	200.00	99.00	20.00	0.80	0.00	11.00
6.80	60.00	400.00	52.00	25.00	1.90	0.00	1.90
7.10	7.00	200.00	130.00	37.00	1.80	0.00	8.10
5.50	97.00	500.00	100.00	20.00	0.90	1.80	0.00
7.10	5.00	200.00	63.00	3.30	0.10	22.00	0.00
6.50	43.00	300.00	38.00	31.00	1.90	3.50	0.00
7.00	5.00	200.00	58.00	26.00	0.70	0.00	10.00
5.80	110.00	600.00	47.00	36.00	2.40	5.50	0.00
	6.00					7.50	
	8.00					5.50	
	9.00					12.00	
	14.00					8.60	
	24.00					1.30	
	9.00					1.90	

pH - CaCl2 1:5	pH - WATER 1:5	PHOSPHORUS - COLWELL (mg/kg)	Phosphorus (mg/kg)	Phosphorus Buffer Index (PBI)	POTASSIUM (%)	POTASSIUM: MAGNESIUM RATIO
5.80	6.65	175.00	330.00	52.50	28.50	1.75
7.05	7.90	12.50	110.00	93.00	33.50	1.80
4.75	5.60	68.00	220.00	67.50	24.50	1.75
6.10	7.20	7.67	65.00	125.00	8.65	0.25
5.85	6.80	80.07	337.00	86.00	26.50	1.45

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400.00
2000.00
1500.00
500.00
1600.00
500.00
1500.00
500.00
1900.00
400.00
1600.00
400.00
1800.00

SODIUM (% CATIONS)	SODIUM (%)	Total Nitrogen (N) mg/Kg
0.00	5.60	980.00
0.00	9.85	400.00
2.45	0.00	580.00
2.50	13.00	230.00
0.00	5.95	1070.00

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CENTRE PIVOT 23 (0-10CM) (MP 23)	10.00	1.85	2.05	535.00	58.50
CENTRE PIVOT 23 (30-40CM) (MP 23)	0.00	0.00	1.00	445.00	44.50
CENTRE PIVOT 3 (0-10CM) (MP 17)	9.00	1.30	1.35	890.00	49.50
CENTRE PIVOT 3 (30-40CM) (MP 17)	0.00	0.00	0.65	750.00	39.00
CENTRE PIVOT 4 (0-10CM) (MP 18)	0.00	0.00	2.45	1015.00	57.00
CENTRE PIVOT 4 (30-40CM) (MP 18)	0.00	0.00	0.80	1450.00	42.00
CENTRE PIVOT 5 (0-10CM) (MP 19)	13.00	2.05	4.30	1115.00	46.50
CENTRE PIVOT 5 (30-40 CM) (MP 19)	9.00	0.95	0.95	550.00	31.00
CENTRE PIVOT 6 (0-10CM) (MP 20)	4.50	0.55	1.75	1100.00	52.00
CENTRE PIVOT 6 (30-40CM) (MP 20)	0.00	0.00	0.65	955.00	31.50
CENTRE PIVOT 7 (0-10CM) (MP 21)	9.00	1.00	1.60	1350.00	42.50

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3.45	3.60	5.94	16.50	0.00	90.00	3.90
4.35	1.15	9.78	20.00	0.00	60.00	3.80
3.85	2.95	7.78	19.50	0.00	110.00	1.30
3.80	1.35	9.95	81.50	0.00	133.33	3.25
5.25	4.10	9.28	10.50	0.00	100.00	1.30
4.95	2.45	11.35	44.50	0.00	220.00	1.95
4.60	2.25	10.26	85.00	0.00	230.00	2.05
3.40	0.85	10.76	90.50	0.00	136.67	4.20
5.25	3.25	10.01	26.50	0.00	130.00	1.60
2.55	1.25	7.97	60.50	0.00	123.33	2.25
4.45	2.75	10.36	140.00	0.00	365.00	1.65

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1.35	0.08	0.11	7.00	16.00	21.50	1.65
1.12	0.50	0.00	9.50	39.50	7.20	0.34
2.30	0.23	0.10	9.00	16.50	26.00	1.45
1.95	0.96	0.00	14.50	31.50	20.00	0.27
2.55	0.16	0.00	9.50	14.00	13.85	1.70
3.60	0.83	0.00	15.50	18.00	14.67	0.58
2.90	0.54	0.14	8.50	20.50	37.95	2.05
1.41	1.65	0.10	14.00	40.00	21.67	0.30
2.90	0.22	0.05	9.50	16.00	23.00	2.00
2.45	0.72	0.00	15.50	29.50	11.27	0.21
3.50	0.65	0.10	6.50	16.00	109.00	1.80

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4.65	5.55	113.00	370.00	61.00	22.50	1.40
5.90	7.00	7.67	160.00	150.00	10.90	0.30
5.25	6.35	34.50	220.00	46.00	29.50	1.80
6.60	7.65	7.33	110.00	104.50	19.50	0.65
5.70	6.75	150.00	245.00	59.50	27.00	1.95
6.40	7.55	16.00	115.00	115.00	32.50	1.85
5.35	6.20	133.50	280.00	85.00	26.50	1.35
5.35	6.65	12.67	110.00	81.50	12.15	0.40
5.45	6.55	166.50	205.00	69.00	29.00	1.80
7.00	8.05	18.00	100.01	67.50	30.50	1.20
5.00	5.80	98.00	325.00	52.00	34.00	2.15

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1.29	0.00	830.00
1.83	4.75	275.00
2.90	0.00	860.00
4.00	9.75	450.00
0.00	1.70	845.00
2.87	7.45	280.00
0.90	3.60	1055.00
10.90	0.00	225.00
1.75	0.47	920.00
0.63	9.15	220.00
6.20	0.00	990.00