

## Soil Monitoring Data December 2017

Point 14

Published: 20 Jan 2018 Licensee: Cargill Newcastle EPL no.: 5810								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units of Measure	December 2017		
						Min Value	Mean Value	Max Value
14 – Surface	13/12/17	19/01/18	pH	Yearly	pH	5.9	6.3	6.7
			Available Phosphorus (Bray)*	Yearly	mg/kg	4.0	24.1	37.0
			Available Phosphorus (Colwell)**	Yearly	mg/kg	26	49	111
			Phosphorus as P (total)	3-Yearly	mg/kg	299	633	1,210
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	481	965	1,500
			TKN	3-Yearly	mg/kg	970	4,748	11,600
			Nitrate as N	3-Yearly	mg/kg	1.2	5.9	9.4
			Nitrogen as N (total)	3-Yearly	mg/kg	970	4,752	11,600
			Nitrogen Oxides	3-Yearly	mg/kg	1.2	6.0	10.0
			Chloride	Yearly	mg/kg	120	222	390
			Conductivity	Yearly	µS/cm	154	253	437
			Exchangeable Calcium	Yearly	meq/100g	2.0	5.1	12.1
			Exchangeable Magnesium	Yearly	meq/100g	0.6	1.4	2.9
			Exchangeable Potassium	Yearly	meq/100g	<0.1	0.3	0.8
			Exchangeable Sodium	Yearly	meq/100g	0.1	1.1	2.4
			Cation Exchange Capacity	Yearly	meq/100g	3.2	8.0	17.3
Moisture Content	Yearly	%	19.9	38.1	68.1			
14 – Sub-surface	13/12/17	19/01/18	pH	Yearly	pH	7.8	8.1	8.2
			Available Phosphorus (Bray)*	Yearly	mg/kg	5.2	12.9	18.6
			Available Phosphorus (Colwell)**	Yearly	mg/kg	6	11	19
			Phosphorus as P (total)	3-Yearly	mg/kg	64	149	240
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	<250	309	623
			TKN	3-Yearly	mg/kg	90	497	990
			Nitrate as N	3-Yearly	mg/kg	0.4	1.7	2.4
			Nitrogen as N (total)	3-Yearly	mg/kg	90	497	990
			Nitrogen Oxides	3-Yearly	mg/kg	0.4	1.7	2.4

			Chloride	Yearly	mg/kg	40	62	70
			Conductivity	Yearly	μS/cm	133	170	239
			Exchangeable Calcium	Yearly	meq/100g	0.8	3.0	5.4
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	0.3	0.6
			Exchangeable Potassium	Yearly	meq/100g	<0.1	0.1	0.1
			Exchangeable Sodium	Yearly	meq/100g	<0.2	0.3	0.5
			Cation Exchange Capacity	Yearly	meq/100g	0.8	3.6	6.5
			Moisture Content	Yearly	%	13.0	17.4	21.5

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EPL no.: 5810								
EPA Point ID	Date of Sampling	Date Results Received	Pollutant	Measurement Period and Monitoring Frequency Required by Licence	Units of Measure	December 2017		
						Min Value	Mean Value	Max Value
15 – Surface	12/12/17	19/01/18	pH	Yearly	pH	7.7	7.8	8.0
			Available Phosphorus (Bray)*	Yearly	mg/kg	15.9	20.1	27.6
			Available Phosphorus (Colwell)**	Yearly	mg/kg	18	24	36
			Phosphorus as P (total)	3-Yearly	mg/kg	249	275	328
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	438	448	458
			TKN	3-Yearly	mg/kg	1,250	1,493	1,850
			Nitrate as N	3-Yearly	mg/kg	1.1	2.0	3.0
			Nitrogen as N (total)	3-Yearly	mg/kg	1,250	1,493	1,850
			Nitrogen Oxides	3-Yearly	mg/kg	1.4	2.4	3.5
			Chloride	Yearly	mg/kg	30	50	80
			Conductivity	Yearly	µS/cm	131	158	210
			Exchangeable Calcium	Yearly	meq/100g	3.5	4.0	4.3
			Exchangeable Magnesium	Yearly	meq/100g	0.7	0.7	0.8
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	0.2	0.3
			Cation Exchange Capacity	Yearly	meq/100g	4.3	5.0	5.5
Moisture Content	Yearly	%	1.5	3.0	4.4			
15 – Sub-surface	12/12/17	19/01/18	pH	Yearly	pH	8.5	8.7	8.8
			Available Phosphorus (Bray)*	Yearly	mg/kg	3.4	4.7	5.6
			Available Phosphorus (Colwell)**	Yearly	mg/kg	<5	5	9
			Phosphorus as P (total)	3-Yearly	mg/kg	62	86	120
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	<250	253	377
			TKN	3-Yearly	mg/kg	130	277	470
			Nitrate as N	3-Yearly	mg/kg	<0.1	0.1	0.2
			Nitrogen as N (total)	3-Yearly	mg/kg	130	277	470
			Nitrogen Oxides	3-Yearly	mg/kg	<0.1	0.1	0.2
			Chloride	Yearly	mg/kg	<10	10	20

			Conductivity	Yearly	μS/cm	65	79	104
			Exchangeable Calcium	Yearly	meq/100g	1.0	1.9	3.3
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	0.3	0.6
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Cation Exchange Capacity	Yearly	meq/100g	1.0	2.1	4.0
			Moisture Content	Yearly	%	2.1	5.2	8.0

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						Min Value	Mean Value	Max Value
16 – Surface	12/12/17	19/01/18	pH	Yearly	pH	6.9	7.5	8.0
			Available Phosphorus (Bray)*	Yearly	mg/kg	21.4	23.1	26.2
			Available Phosphorus (Colwell)**	Yearly	mg/kg	33	43	51
			Phosphorus as P (total)	3-Yearly	mg/kg	305	388	500
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	560	614	712
			TKN	3-Yearly	mg/kg	2,140	2,540	3,320
			Nitrate as N	3-Yearly	mg/kg	3.4	6.8	12.1
			Nitrogen as N (total)	3-Yearly	mg/kg	2,140	2,547	3,330
			Nitrogen Oxides	3-Yearly	mg/kg	3.8	7.6	12.7
			Chloride	Yearly	mg/kg	20	73	180
			Conductivity	Yearly	µS/cm	145	247	442
			Exchangeable Calcium	Yearly	meq/100g	4.9	5.6	6.4
			Exchangeable Magnesium	Yearly	meq/100g	0.8	0.9	1.0
			Exchangeable Potassium	Yearly	meq/100g	0.1	0.2	0.3
			Exchangeable Sodium	Yearly	meq/100g	<0.2	0.3	0.6
			Cation Exchange Capacity	Yearly	meq/100g	6.2	7.0	7.6
Moisture Content	Yearly	%	2.8	5.6	11.1			
16 – Sub-surface	12/12/17	19/01/18	pH	Yearly	pH	8.0	8.2	8.5
			Available Phosphorus (Bray)*	Yearly	mg/kg	14.4	16.9	19.8
			Available Phosphorus (Colwell)**	Yearly	mg/kg	21	25	27
			Phosphorus as P (total)	3-Yearly	mg/kg	174	236	299
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	476	595	818
			TKN	3-Yearly	mg/kg	630	1,037	1,650
			Nitrate as N	3-Yearly	mg/kg	2.6	2.9	3.2
			Nitrogen as N (total)	3-Yearly	mg/kg	630	1,037	1,650
			Nitrogen Oxides	3-Yearly	mg/kg	2.8	3.1	3.4
			Chloride	Yearly	mg/kg	<10	12	20

			Conductivity	Yearly	μS/cm	103	114	124
			Exchangeable Calcium	Yearly	meq/100g	1.9	2.6	3.0
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	0.2	0.5
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	0.2	0.3
			Cation Exchange Capacity	Yearly	meq/100g	2.2	2.9	3.5
			Moisture Content	Yearly	%	3.2	6.1	10.3

## Point 17

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						Min Value	Mean Value	Max Value
17 – Surface	12/12/17	19/01/18	pH	Yearly	pH	6.5	7.2	7.6
			Available Phosphorus (Bray)*	Yearly	mg/kg	25.8	53.6	88.5
			Available Phosphorus (Colwell)**	Yearly	mg/kg	23	73	119
			Phosphorus as P (total)	3-Yearly	mg/kg	310	675	1,460
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	568	1,098	1,690
			TKN	3-Yearly	mg/kg	2,040	3,975	7,070
			Nitrate as N	3-Yearly	mg/kg	1.3	9.2	19.7
			Nitrogen as N (total)	3-Yearly	mg/kg	2,060	3,983	7,070
			Nitrogen Oxides	3-Yearly	mg/kg	1.5	9.5	19.9
			Chloride	Yearly	mg/kg	120	272	660
			Conductivity	Yearly	µS/cm	301	420	557
			Exchangeable Calcium	Yearly	meq/100g	1.7	5.0	7.3
			Exchangeable Magnesium	Yearly	meq/100g	0.5	1.1	1.6
			Exchangeable Potassium	Yearly	meq/100g	<0.2	0.3	0.5
			Exchangeable Sodium	Yearly	meq/100g	0.3	1.8	6.4
			Cation Exchange Capacity	Yearly	meq/100g	2.8	8.2	13.3
Moisture Content	Yearly	%	18.6	35.5	53.0			
17 – Sub-surface	12/12/17	19/01/18	pH	Yearly	pH	8.0	8.2	8.3
			Available Phosphorus (Bray)*	Yearly	mg/kg	9.8	17.1	26.0
			Available Phosphorus (Colwell)**	Yearly	mg/kg	8	14	22
			Phosphorus as P (total)	3-Yearly	mg/kg	81	142	207
			Phosphorus Sorption Capacity	3-Yearly	mg P sorbed/kg soil	<250	344	424
			TKN	3-Yearly	mg/kg	290	530	820
			Nitrate as N	3-Yearly	mg/kg	0.8	2.7	3.3
			Nitrogen as N (total)	3-Yearly	mg/kg	290	530	820
			Nitrogen Oxides	3-Yearly	mg/kg	0.9	2.8	3.4
			Chloride	Yearly	mg/kg	10	40	60

			Conductivity	Yearly	μS/cm	110	148	193
			Exchangeable Calcium	Yearly	meq/100g	1.2	1.6	1.9
			Exchangeable Magnesium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Potassium	Yearly	meq/100g	<0.2	<0.2	<0.2
			Exchangeable Sodium	Yearly	meq/100g	<0.2	0.3	0.7
			Cation Exchange Capacity	Yearly	meq/100g	1.2	1.9	2.2
			Moisture Content	Yearly	%	9.2	16.4	22.8