

## EPL - Pollution Monitoring Data

Environment Protection Licence Number:

5042

Licensee:

Pasminco Cockle Creek Smelter Pty Ltd  
Pasminco Cockle Creek Smelter & Incitec

Premises:

Main Road  
Boolaroo NSW 2284

Link to full Environment Protection Licence:

<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=5042&id=5042&option=licence&searchrange=licence&range=POEO licence&prp=no&status=Issued>

Sampling Period:

January 2017 to December 2017

Date Last Data Obtained During Period:

18/01/2018

Date Published:

### Concentration Limits

EPA Point ID	Pollutant	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	Sampling method	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
Point 58 Groundwater Monitoring (BG2A)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	129	129	129	129
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	48	48	48	48
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1170	1170	1170	1170
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	1	3.72	3.72	3.72	3.72
	Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	1	0.09	0.09	0.09	0.09
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	1	0.001	0.001	0.001	0.001
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	81	81	81	81
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	1	0.029	0.029	0.029	0.029
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	1	241.8	241.8	241.8	241.8
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	1	5.55	5.55	5.55	5.55
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	22	22	22	22
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	650	650	650	650
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	1	8.37mbgl	8.37mbgl	8.37mbgl	8.37mbgl
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	268	268	268	268
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	1	20.9	20.9	20.9	20.9
Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	1	0.025	0.025	0.025	0.025	

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Point 59 Groundwater Monitoring (BH62)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	7	39	31	71
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	3	0.17	0.18	0.17	0.20
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	7.0	36.3	39.0	71.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	3	0.0020	0.0022	0.0020	0.0026
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	7	16	16	24.000
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	788	1219	1219	1650.000
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	4,086	4,887	4,887	5,688
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.1	0.2	0.2	0.3
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	3	0.001	0.005	0.005	0.008
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	38	81	81	124.000
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	3	0.008	0.027	0.015	0.057
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	174.0	260.5	260.5	347.0
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	5.2	5.5	5.5	5.8
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	18	19	19	20.000
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	694	962	962	1230.000
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	7.87	8.02	7.95	8.02
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	438	623	623	807.000
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	20.3	20.4	20.4	20.5
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	1,760	3,060	3,060	4,360
	Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	3	0.118	0.139666667	0.147	0.154
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	3	0.120	1.430	0.640	3.530	

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Point 60 Groundwater Monitoring (BH63)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	3	5	5	7
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.40	0.50	0.50	0.60
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	3.0	5.0	5.0	7.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0001	0.0001	0.0001	0.0001
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1	1	1	1
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	69	69	69	69
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	470	489	489	508
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.1	0.2	0.2	0.2
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.006	0.006	0.010
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1	1	1	1
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.006	0.006	0.010
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	412.0	470.5	470.5	529.0
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	4.6	4.7	4.7	4.8
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1	1	1	1
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	112	112	112	112
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	7.08	7.22	7.22	7.35
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	124	124	124	124
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	20.0	20.7	20.7	21.3
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	2,300	13,450	13,450	24,600
	Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0	0	0.071	0.098
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	2	1.820	3.080	3.080	4.340	

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Point 61 Groundwater Monitoring (BH64D)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	414	436	436	458
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.42	0.46	0.46	0.50
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	414.0	436.0	436.0	458.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0001	0.0001	0.0001	0.0001
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	226	226	226	226
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1860	1860	1860	1860
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	6,314	6,651	6,651	6,988
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.2	0.3	0.3	0.3
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.001	0.001	0.001
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	145	145	145	145
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.002	0.002	0.002
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	150.0	162.0	162.0	173.9
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	7.1	7.1	7.1	7.1
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	19	19	19	19
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1270	1270	1270	1270
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	5.64	5.79	5.79	5.94
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	512	512	512	512
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	19.7	20.8	20.8	21.9
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	3,980	4,495	4,495	5,010
Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.005	0.007	0.007	0.009	
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	2	0.820	3.320	3.320	5.820	

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Point 612 Groundwater Monitoring (BH65S)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	1	1	1	1
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.12	0.13	0.13	0.14
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	1.0	1.0	1.0	1.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0121	0.0149	0.0149	0.0176
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	10	10	10	10
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1310	1310	1310	1310
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	4,528	5,181	5,181	5,834
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.3	0.4	0.4	0.4
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.010	0.017	0.017	0.024
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	133	133	133	133
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.007	0.008	0.008	0.008
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	579.0	613.5	613.5	648.0
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	3.6	3.6	3.6	3.7
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	6	6	6	6
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	970	970	970	970
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	6.27	6.50	6.50	6.72
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	710	710	710	710
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	19.2	19.2	19.2	19.2
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	3,340	3,855	3,855	4,370
	Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0	1	0.570	0.717
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	2	0.910	1.185	1.185	1.460	

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Point 63 Groundwater Monitoring (BH65D)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	46	167	167	288
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.48	0.64	0.64	0.80
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	1.0	144.5	144.5	288.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0001	0.0001	0.0001	0.0001
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	287	287	287	287
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1550	1550	1550	1550
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	5,225	5,663	5,663	6,100
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.1	0.3	0.3	0.5
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.001	0.001	0.001
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	2	2	2	2
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.002	0.002	0.002
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	44.0	90.0	90.0	136.0
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	7.5	9.4	9.4	11.3
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	12	12	12	12
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	933	933	933	933
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	6.01	6.21	6.21	6.41
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	184	184	184	184
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	19.1	20.2	20.2	21.3
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	3,260	3,735	3,735	4,210
Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0	0	0.005	0.005	
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	2	0.340	2.400	2.400	4.760	

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Point 64 Groundwater Monitoring (BH64S)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	54	99	99	144
	Ammonia	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.06	0.07	0.07	0.07
	Bicarbonate	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	54.0	99.0	99.0	144.0
	Cadmium	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0042	0.0026	0.0026	0.0009
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	119	119	119	119
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1860	1860	1860	1860
	Conductivity	Water and / or land monitoring	Microsiemens per centimetre	Every 6 months	Representative sample	2	6,763	7,117	7,117	7,470
	Fluoride	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.0	0.4	0.4	0.8
	Lead	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.001	0.001	0.001	0.001
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	282	282	282	282
	Nickel	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0.025	0.088	0.088	0.150
	Oxidation Reduction Potential <sup>#</sup>	Water and / or land monitoring	Millivolts	Every 6 months	Probe	2	329.0	350.5	350.5	372.0
	pH	Water and / or land monitoring	pH	Every 6 months	Probe	2	5.5	5.6	5.6	5.8
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	13	13	13	13
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1510	1510	1510	1510
	Standing Water Level	Water and / or land monitoring	Metres (Australian Height Datum)	Every 6 months	In situ	2	5.02	5.27	5.27	5.52
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1720	1720	1720	1720
	Temperature	Water and / or land monitoring	degrees Celsius	Every 6 months	Probe	2	19.7	19.7	19.7	19.7
	Total dissolved solids	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	5,250	5,775	5,775	6,300
Zinc	Water and / or land monitoring	Milligrams per litre	Every 6 months	Representative sample	2	0	0.042	0.042	0.063	
Disolved Oxygen	Water and / or land monitoring	Milligrams per litre	Every 6 months	Probe	2	1.340	1.585	1.585	1.830	

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N/A (Sump A)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	37	37	37	37
	Cadmium	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.001	0.007	0.005	0.017
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	29	29	29	29
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	141	141	141	141
	Lead	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.001	0.002	0.001	0.004
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	19	19	19	19
	Nickel	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.003	0.012	0.011	0.024
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	10	10	10	10
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	142	142	142	142
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	237	237	237	237
	Zinc	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.202	1.654	1.097	4.220
N/A (Sump B)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	76	76	76	76
	Cadmium	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.001	0.003	0.004	0.005
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	27	27	27	27
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	76	76	76	76
	Lead	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.003	0.005	0.005	0.008
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	15	15	15	15
	Nickel	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.006	0.016	0.018	0.023
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	14	14	14	14
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	101	101	101	101
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	155	155	155	155
	Zinc	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.388	1.137	1.239	1.680



## EPL - Pollution Monitoring Data

Environment Protection Licence Number:

5042

Licensee:

Pasminco Cockle Creek Smelter Pty Ltd  
Pasminco Cockle Creek Smelter & Incitec

Premises:

Main Road  
Boolaroo NSW 2284

Link to full Environment Protection Licence:

<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=5042&id=5042&option=licence&searchrange=licence&range=PEEO licence&prp=no&status=Issued>

Sampling Period:

January 2017 to December 2017

Date Last Data Obtained During Period:

18/01/2018

Date Published:

### Concentration Limits

EPA Point ID	Pollutant	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	Sampling method	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
N/A (Sump C)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	21	21	21	21
	Cadmium	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.005	0.018	0.018	0.032
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	43	43	43	43
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	1160	1160	1160	1160
	Lead	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.001	0.021	0.018	0.047
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	94	94	94	94
	Nickel	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.011	0.029	0.026	0.052
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	8	8	8	8
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	873	873	873	873
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	555	555	555	555
	Zinc	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.277	1.777	1.730	3.370
	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	74	74	74	74
	Cadmium	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.004	0.031	0.030	0.004
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	42	42	42	42
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	512	512	512	512
	Lead	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.001	0.002	0.002	0.003
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	51	51	51	51
	Nickel	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.005	0.035	0.023	0.030
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	14	14	14	14
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	429	429	429	429
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	1	441	441	441	441
	Zinc	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	4	0.474	3.177	2.615	5.880

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Sampling Period:

January 2017 to December 2017

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18/01/2018

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### Concentration Limits

EPA Point ID	Pollutant	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	Sampling method	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
N/A (Sump E)	Alkalinity (as calcium carbonate)	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	76	96.5	96.5	117
	Cadmium	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	5	0.0183	0.02678	0.0265	0.0199
	Calcium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	161	162.5	162.5	164
	Chloride	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	844	881	881	918
	Lead	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	5	0.002	0.0114	0.0265	0.033
	Magnesium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	71	82	82	93
	Nickel	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	5	0.013	0.0162	0.016	0.021
	Potassium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	38	40.5	40.5	43
	Sodium	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	844	867	867	890
	Sulfate	Water and / or land monitoring	Milligrams per litre	Yearly	Representative sample	2	1210	1345	1345	1480
	Zinc	Water and / or land monitoring	Milligrams per litre	Quarterly	Representative sample	5	0.445	0.7202	0.712	1.050

**Notes:**

<sup>#</sup> Oxidation Reduction Potential taken as Eh, converted to Eh from field data by  $Eh = Er + 199$  (mV).

<sup>^</sup> Sump dry at time of some monitoring events.

\*Where results are below limit of reporting (LOR), the LOR has been conservatively adopted in the calculation of the mean and median.

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Sampling Period:

January 2017 to December 2017

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18/01/2018

Date Published:

### Concentration Limits

EPA Point ID	Pollutant	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	Sampling method	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
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### Groundwater monitoring

EPA Point ID / other identifier	Point ID	Pollutant (or other)	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
N/A	-	Height of groundwater	Groundwater monitoring	Metres (Australian Height Datum)		4				
N/A	-	Height of groundwater	Groundwater monitoring	Metres (Australian Height Datum)		4				
N/A	Sump A	As	Groundwater monitoring	Milligrams per litre	N/A	1	0.0010	0.0010	0.0010	0.0010
		Cd	Groundwater monitoring	Milligrams per litre	N/A	4	0.001	0.007	0.005	0.017
		Pb	Groundwater monitoring	Milligrams per litre	N/A	4	0.001	0.002	0.001	0.004
		Hg	Groundwater monitoring	Milligrams per litre	N/A	1	0.0001	0.0001	0.0001	0.0001
		Selenium	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01
		Zn	Groundwater monitoring	Milligrams per litre	N/A	4	0.202	1.654	1.097	4.220
	Sump B	Nitrate	Groundwater monitoring	Milligrams per litre	N/A	1	0.02	0.02	0.02	0.02
		As	Groundwater monitoring	Milligrams per litre	N/A	1	0.001	0.001	0.001	0.001
		Cd	Groundwater monitoring	Milligrams per litre	N/A	4	0.001	0.003	0.004	0.005
		Pb	Groundwater monitoring	Milligrams per litre	N/A	4	0.003	0.005	0.005	0.008
		Hg	Groundwater monitoring	Milligrams per litre	N/A	1	0.0001	0.0001	0.0001	0.0001
		Selenium	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01
	Sump C	Zn	Groundwater monitoring	Milligrams per litre	N/A	4	0.388	1.137	1.239	1.680
		Nitrate	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01
		As	Groundwater monitoring	Milligrams per litre	N/A	1	0.001	0.001	0.001	0.001
		Cd	Groundwater monitoring	Milligrams per litre	N/A	4	0.005	0.018	0.018	0.032
		Pb	Groundwater monitoring	Milligrams per litre	N/A	4	0.001	0.021	0.018	0.047
		Hg	Groundwater monitoring	Milligrams per litre	N/A	1	0.0004	0.0004	0.0004	0.0004
	Sump D	Selenium	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01
		Zn	Groundwater monitoring	Milligrams per litre	N/A	4	0.277	1.777	1.730	3.370
		Nitrate	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01
		As	Groundwater monitoring	Milligrams per litre	N/A	1	0.001	0.001	0.001	0.001
		Cd	Groundwater monitoring	Milligrams per litre	N/A	4	0.004	0.031	0.030	0.004
		Pb	Groundwater monitoring	Milligrams per litre	N/A	4	0.001	0.002	0.002	0.003
Sump E	Hg	Groundwater monitoring	Milligrams per litre	N/A	1	0.0001	0.0001	0.0001	0.0001	
	Selenium	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01	
	Zn	Groundwater monitoring	Milligrams per litre	N/A	4	0.474	3.177	2.615	5.880	
	Nitrate	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01	
	As	Groundwater monitoring	Milligrams per litre	N/A	1	0.008	0.008	0.008	0.008	
	Cd	Groundwater monitoring	Milligrams per litre	N/A	4	0.0183	0.02678	0.0265	0.0199	
	Pb	Groundwater monitoring	Milligrams per litre	N/A	4	0.002	0.0114	0.0265	0.033	
	Hg	Groundwater monitoring	Milligrams per litre	N/A	1	0.0001	0.0001	0.0001	0.0001	
	Selenium	Groundwater monitoring	Milligrams per litre	N/A	1	0.01	0.01	0.01	0.01	
	Zn	Groundwater monitoring	Milligrams per litre	N/A	4	0.445	0.7202	0.712	1.050	
	Nitrate	Groundwater monitoring	Milligrams per litre	N/A	1	0.11	0.11	0.11	0.11	

Notes:

^ Additional sump samples collected and analysed for analytes (Cd, Pb & Zn) have been included in calculations.

\* Where results are below limit of reporting (LOR), the LOR has been conservatively adopted in the calculation of the mean and median.

## EPL - Pollution Monitoring Data

Environment Protection Licence Number: 5042  
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Boolaroo NSW 2284  
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Sampling Period: January 2017 to December 2017  
Date Last Data Obtained During Period: 18/01/2018  
Date Published:

### Concentration Limits

EPA Point ID	Pollutant	Type of Monitoring Point	Unit of Measure	Monitoring Frequency Required by Licence	Sampling method	No. of times measured during year	Min Value	Mean value*	Median value*	Max Value
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### Data correction

EPA Point ID	Sample Date	Pollutant	Original Data	Corrected Data	Date Corrected	Date Originally Published	Reason