

Monthly Monitoring Data

Environmental Protection Licence Number: 12693

link to EPL12693 on EPA Public Register: [Click Here](#)

Licensee: Newcastle Coal Infrastructure Group Pty Ltd, Locked Bag 6003, Hunter Region Mail Centre NSW 2310

Premises: Newcastle Coal Infrastructure Group, Cormorant Road, Kooragang NSW 2304

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Note: On the 25th of August 2017 an amendment was made to the NCIG Environmental Protection Licence (EPL12693) which removed the requirement for ambient air quality monitoring at Points 7-10 and 14-15. However, NCIG will continue to publish ambient air quality data for these locations previously listed in EPL12693 for the interest of the public.

Depositional Dust Monitoring

Sample Period: 10 June 2022 – 11 July 2022

Units of Measure: Insoluble Solids (grams per square metre per month (g/m²/month))

Frequency: Monthly

	Monitoring Point 7 - DG3 (Kooragang Island)	Monitoring Point 8 - DG4 (Mayfield Sport Rec Club)	Monitoring Point 9 - DG5 (Mayfield West)	Monitoring Point 10 - DG6 (Sandgate)
Depositional Dust	0.8	0.8	0.9	2.1

High Volume Air Sampling

Units of measure: Micrograms per cubic metre (µg/m³)

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River, Mayfield West)				Monitoring Point 15 - HVAS 2 (Crebert Street, Mayfield)			
	TSP		PM10		TSP		PM10	
03-Jun-22	53	03-Jun-22	28	03-Jun-22	28	03-Jun-22	15	
09-Jun-22	60	09-Jun-22	16	09-Jun-22	23	09-Jun-22	12	
15-Jun-22	70	15-Jun-22	29	15-Jun-22	32	15-Jun-22	18	
21-Jun-22	71	21-Jun-22	31	21-Jun-22	17	21-Jun-22	16	
27-Jun-22	70	27-Jun-22	31	27-Jun-22	34	27-Jun-22	11	

NB: Sample period is a 24-hour period on each of the above dates | TSP = Total Suspended Particulates | PM10 = Particulate Matter <10 microns

6 Monthly Groundwater Monitoring

Sampling Point 1, 38, 39 (Background Monitoring Wells)

Groundwater Sampling Point 1 (GW1)

Sample Date: 21 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.28
Conductivity	µS/cm	Every 6 Months	18700
Bromide	mg/L	Every 6 Months	15.4
Aluminium	mg/L	Every 6 Months	<0.01
Arsenic	mg/L	Every 6 Months	<0.001
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.234
Nickel	mg/L	Every 6 Months	<0.001
Zinc	mg/L	Every 6 Months	0.018
Iron	mg/L	Every 6 Months	2.39
Total PAH	µg/L	Every 6 Months	<0.5
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	<50
TPH C15-28 Fraction	µg/L	Every 6 Months	<100
TPH C29-36 Fraction	µg/L	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	<0.004

Groundwater Sampling Point 38 (BH21S)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	10.9
Conductivity	µS/cm	Every 6 Months	1890
Bromide	mg/L	Every 6 Months	1.78
Aluminium	mg/L	Every 6 Months	0.23
Arsenic	mg/L	Every 6 Months	0.001
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.008
Nickel	mg/L	Every 6 Months	0.001
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.06
Total PAH	µg/L	Every 6 Months	138
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	230
TPH C15-28 Fraction	µg/L	Every 6 Months	110
TPH C29-36 Fraction	µg/L	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.233

Groundwater Sampling Point 39 (BH21D)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.5
Conductivity	µS/cm	Every 6 Months	10100
Bromide	mg/L	Every 6 Months	11
Aluminium	mg/L	Every 6 Months	0.05
Arsenic	mg/L	Every 6 Months	0.003
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.009
Nickel	mg/L	Every 6 Months	0.002
Zinc	mg/L	Every 6 Months	0.007
Iron	mg/L	Every 6 Months	0.08
Total PAH	µg/L	Every 6 Months	56.2
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	120
TPH C15-28 Fraction	µg/L	Every 6 Months	<100
TPH C29-36 Fraction	µg/L	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.117

Sampling Point 20,21,22,23,36,37,40,41 (Regular Monitoring Wells)

Groundwater Sampling Point 20 (K9/3N)

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.19	No
Conductivity	µS/cm	Every 6 Months	19500	No
Bromide	mg/L	Every 6 Months	17.7	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.968	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.007	No
Iron	mg/L	Every 6 Months	0.09	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 21 (K9/3S)

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.99	No
Conductivity	µS/cm	Every 6 Months	2610	No
Bromide	mg/L	Every 6 Months	1.52	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.004	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.101	No
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 22 (K11/1)

Sample Date: 30 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.39	No
Conductivity	µS/cm	Every 6 Months	802	No
Bromide	mg/L	Every 6 Months	0.191	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.703	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.005	No
Iron	mg/L	Every 6 Months	0.61	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 23 (K11/1S)

Sample Date: 30 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.95	No
Conductivity	µS/cm	Every 6 Months	7260	No
Bromide	mg/L	Every 6 Months	5.5	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.138	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.008	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	50	Yes
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	180	Yes
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 36 (BH20S)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.9	No
Conductivity	µS/cm	Every 6 Months	1300	No
Bromide	mg/L	Every 6 Months	0.217	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.005	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	2.6	No
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	0.027	No
Iron	mg/L	Every 6 Months	3.25	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 37 (BH20D)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.37	No
Conductivity	µS/cm	Every 6 Months	44600	No
Bromide	mg/L	Every 6 Months	60	No
Aluminium	mg/L	Every 6 Months	<0.10	No
Arsenic	mg/L	Every 6 Months	<0.010	No
Cadmium	mg/L	Every 6 Months	<0.0010	No
Copper	mg/L	Every 6 Months	<0.010	No
Manganese	mg/L	Every 6 Months	9.73	No
Nickel	mg/L	Every 6 Months	0.016	No
Zinc	mg/L	Every 6 Months	<0.050	No
Iron	mg/L	Every 6 Months	38.3	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 40 (BH23S)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	8.41	No
Conductivity	µS/cm	Every 6 Months	991	No
Bromide	mg/L	Every 6 Months	0.405	No
Aluminium	mg/L	Every 6 Months	0.02	No
Arsenic	mg/L	Every 6 Months	0.002	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.383	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	µg/L	Every 6 Months	4.6	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.019	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Groundwater Sampling Point 41 (BH23D)

Sample Date: 27 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.95	No
Conductivity	µS/cm	Every 6 Months	17400	No
Bromide	mg/L	Every 6 Months	21	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.81	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.024	No
Iron	mg/L	Every 6 Months	11.2	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.011	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round.

Sampling Point 24,25,26,27,28,29,30,31,32,33 (Additional Contingency Wells)

Groundwater Sampling Point BHe23S (Note: BHe23S has been used as a substitute to Monitoring Point 24 (K11/3E), which no longer exists due to previous impacts to the bore).

Sample Date: N/A

Note: Sampling Point BHe23S was unable to be sampled in this monitoring round as the well was dry.

Groundwater Sampling Point BHe23D (Note: BHe23D has been used as a substitute to Monitoring Point 25 (K11/3W), which no longer exists due to previous impacts to the bore).

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.34
Conductivity	µS/cm	Special Frequency 1	15000
Bromide	mg/L	Special Frequency 1	13.2
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.922
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.06
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 26 (K11/2W)

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.69
Conductivity	µS/cm	Special Frequency 1	7210
Bromide	mg/L	Special Frequency 1	4.26
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.055
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 27 (K11/2E)

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.38
Conductivity	µS/cm	Special Frequency 1	1050
Bromide	mg/L	Special Frequency 1	0.93
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.006
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.437
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.26
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 28 (K9/4W)

Sample Date: 21 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.49
Conductivity	µS/cm	Special Frequency 1	7730
Bromide	mg/L	Special Frequency 1	4.07
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.149
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.013
Iron	mg/L	Special Frequency 1	1.68
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 29 (K9/4E)

Sample Date: 21 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.46
Conductivity	µS/cm	Special Frequency 1	3870
Bromide	mg/L	Special Frequency 1	2.68
Aluminium	mg/L	Special Frequency 1	0.01
Arsenic	mg/L	Special Frequency 1	0.004
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.976
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.009
Iron	mg/L	Special Frequency 1	0.54
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 30 (K9/2W)

Sample Date: 21 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.66
Conductivity	µS/cm	Special Frequency 1	3140
Bromide	mg/L	Special Frequency 1	1.61
Aluminium	mg/L	Special Frequency 1	0.01
Arsenic	mg/L	Special Frequency 1	0.016
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.266
Nickel	mg/L	Special Frequency 1	0.001
Zinc	mg/L	Special Frequency 1	0.009
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 31 (K9/2E)

Sample Date: 21 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.33
Conductivity	µS/cm	Special Frequency 1	29100
Bromide	mg/L	Special Frequency 1	28.4
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.582
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.022
Iron	mg/L	Special Frequency 1	0.33
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point BHe29D (Note: BHe29D has been used as a substitute to Monitoring Point 32 (K10/4W), which no longer exists due to previous impacts to the bore).

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.85
Conductivity	µS/cm	Special Frequency 1	6080
Bromide	mg/L	Special Frequency 1	4.51
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.099
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point BHe26S (Note: BHe26S has been used as a substitute to Monitoring Point 33 (DM10), which no longer exists due to previous impacts to the bore).

Sample Date: 20 June 2022

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	8.06
Conductivity	µS/cm	Special Frequency 1	2610
Bromide	mg/L	Special Frequency 1	1.41
Aluminium	mg/L	Special Frequency 1	0.01
Arsenic	mg/L	Special Frequency 1	0.007
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.168
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

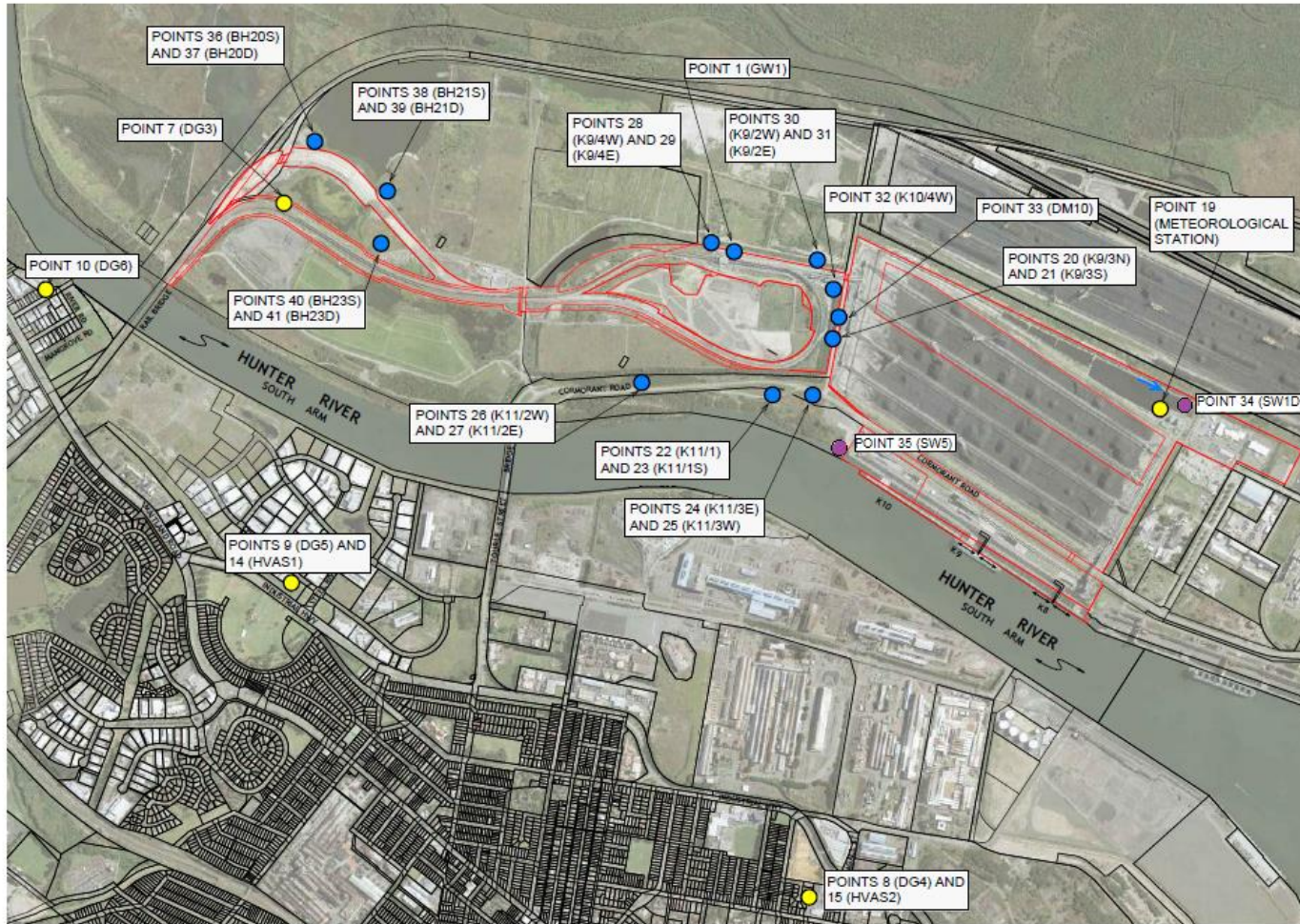


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.