

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

Date Published: 02 February 2020

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: 9 December 2019 – 10 January 2020

Date Obtained: 12 February 2020

Units of Measure: 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	1.9	2.1	1.6	2.8

High Volume Air Sampling

Date Obtained: 12 February 2020

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

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River)				Monitoring Point 15 - HVAS 2 (Crebert Street)			
	TSP		PM10		TSP		PM10	
04-Dec-19	139*	04-Dec-19	79*	04-Dec-19	150*	04-Dec-19	87*	
10-Dec-19	168*	10-Dec-19	107*	10-Dec-19	175*	10-Dec-19	125*	
16-Dec-19	71	16-Dec-19	36	16-Dec-19	82	16-Dec-19	41	
22-Dec-19	74	22-Dec-19	34	22-Dec-19	77	22-Dec-19	39	
28-Dec 19	47	28-Dec 19	27	28-Dec 19	54	28-Dec 19	31	

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

* Elevated result – the Hunter Region experienced poor air quality on 4 and 10 December due to bushfire activity impacting NSW.

6 Monthly Groundwater Monitoring

Results Received: 12th February 2020

Date Published: 2nd March 2020

Groundwater Sampling Point 1 (GW1)

Sample Date: 12th December 2020

Units of Measure: pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.45
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	12200
Bromide	mg/L	Every 6 Months	10.8
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	0.224
Nickel	mg/L	Every 6 Months	<0.001
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	<0.05
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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:** 11th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	11.13
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	1000
Bromide	mg/L	Every 6 Months	0.868
Aluminium	mg/L	Every 6 Months	0.59
Arsenic	mg/L	Every 6 Months	0.003
Cadmium	mg/L	Every 6 Months	0.0002
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.003
Nickel	mg/L	Every 6 Months	0.005
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.08
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	218
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	240
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	280
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	150
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.241

Groundwater Sampling Point 39 (BH21D)**Sample Date:** 12th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.8
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	8370
Bromide	mg/L	Every 6 Months	8.98
Aluminium	mg/L	Every 6 Months	0.07
Arsenic	mg/L	Every 6 Months	0.002
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.255
Nickel	mg/L	Every 6 Months	0.003
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	1.21
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	112
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	160
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.232

Groundwater Sampling Point 20 (K9/3N)**Sample Date:** 12th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.03	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	23500	No
Bromide	mg/L	Every 6 Months	23.5	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	1.2	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	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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:** 12th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.93	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	5100	No
Bromide	mg/L	Every 6 Months	4.52	Yes
Aluminium	mg/L	Every 6 Months	0.01	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	0.169	Yes
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	0.22	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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:** 12th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.61	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	992	No
Bromide	mg/L	Every 6 Months	0.018	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	0.365	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	0.2	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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: 12th December 2020

Units of Measure: pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.74	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	9340	No
Bromide	mg/L	Every 6 Months	8.93	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	0.109	No
Nickel	mg/L	Every 6 Months	0.002	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	0.05	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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 36 (BH20S)**Sample Date:** 11th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.96	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	3100	No
Bromide	mg/L	Every 6 Months	0.175	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.006	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	5.15	No
Nickel	mg/L	Every 6 Months	0.005	No
Zinc	mg/L	Every 6 Months	0.013	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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:** 11th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.25	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	42100	No
Bromide	mg/L	Every 6 Months	53.1	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.007	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	9.34	No
Nickel	mg/L	Every 6 Months	0.016	No
Zinc	mg/L	Every 6 Months	0.042	No
Iron	mg/L	Every 6 Months	38.7	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	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:** 11th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.57	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	623	No
Bromide	mg/L	Every 6 Months	0.321	No
Aluminium	mg/L	Every 6 Months	0.1	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	0.048	No
Nickel	mg/L	Every 6 Months	0.002	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	2.69	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.075	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:** 11th December 2020**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.89	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	17000	No
Bromide	mg/L	Every 6 Months	26	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	0.93	No
Nickel	mg/L	Every 6 Months	0.002	No
Zinc	mg/L	Every 6 Months	0.01	No
Iron	mg/L	Every 6 Months	11.6	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.012	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.

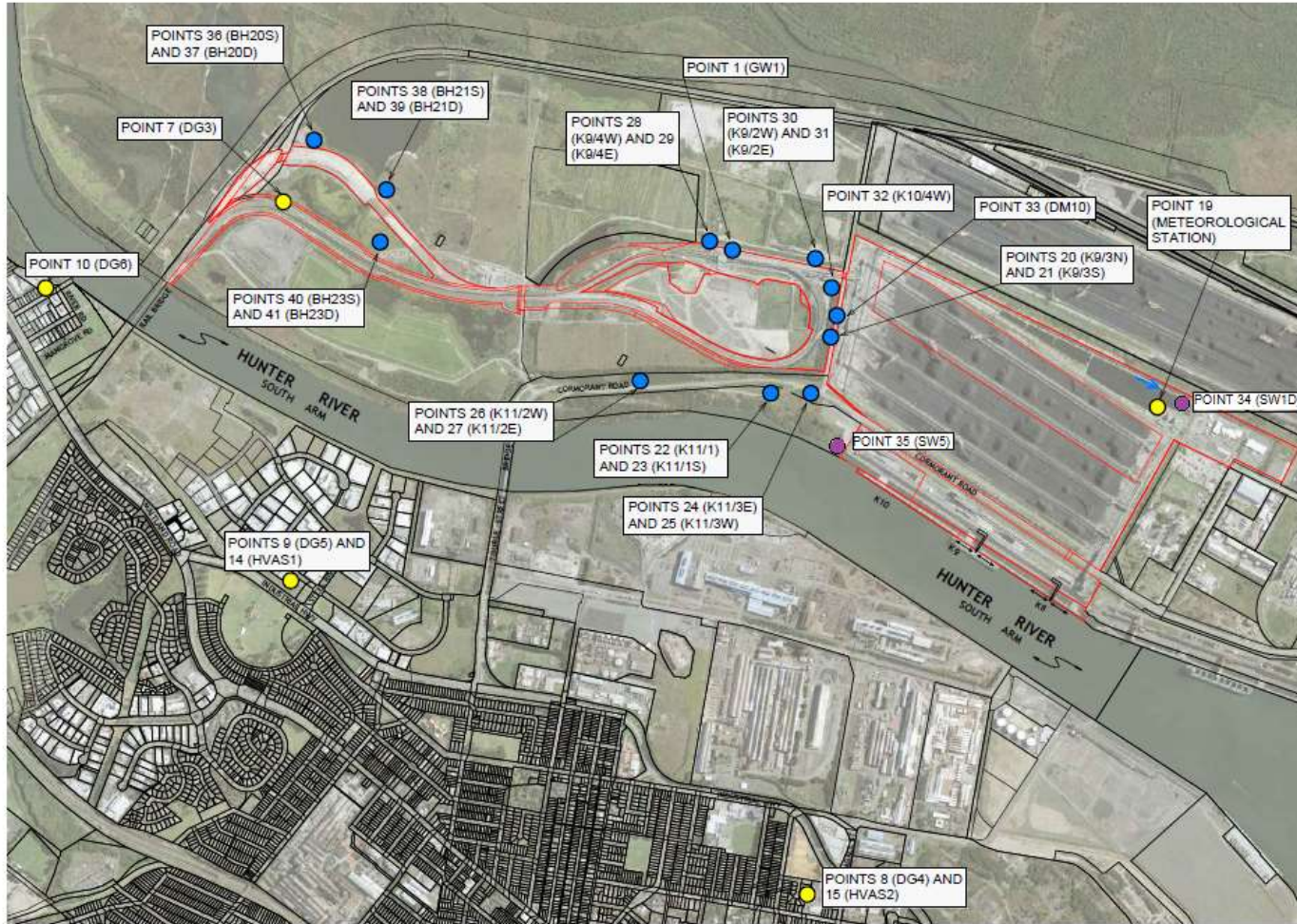


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.