

Adani Carmichael Coal Mine Project

Groundwater Quality data

December 2020

	Sample Type:	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	
	Sample Date:	10/12/2020	13/12/2020	13/12/2020	13/12/2020	13/12/2020	13/12/2020	13/12/2020	13/12/2020	11/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	12/12/2020	
	Client sample ID (1st):	C19002SP	C18012SP	C18013SP	C18002SP	C18003SP	C18001SP	C18011SP	C18010SP	C833SP	Duplicate J	C19012SP	C19010SP	C027P2	C027P1	Duplicate I	
	Hydro-stratigraphic unit:	Clematis SSt (us	DSC Spearpoint	DSC Spearpoint	Clematis SSt	Moolayember	Clematis SSt	DSC Spearpoint	DSC Spearpoint	Colinlea SSt		Rewan	Clematis SSt	Dunda Beds	Alluvium		
Analyte grouping/Analyte	Unit																
pH Value	pH Unit	6.68	7.42	7.59	8.07	7.42	7.25	7.57	8.35	10	6.83	12.3	8.5	6.51	6.83	6.6	
Electrical Conductivity @ 25°C	µS/cm	328	501	408	380	500	664	626	685	1160	483	18400	618	755	6730	609	
Total Dissolved Solids @180°	mg/L	202	304	330	218	322	353	351	420	664	268	6990	340	468	4120	340	
Total Alkalinity as CaCO3	mg/L	40	209	153	136	161	102	123	251	249	63	1890	159	30	183	38	
Sulfate as SO4 - Turbidimetric	mg/L	6	<1	<1	<1	<1	8	3	<1	1	10	198	<1	16	528	20	
Chloride	mg/L	75	28	31	30	38	134	114	61	203	100	891	94	205	1800	145	
Calcium	mg/L	6	3	1	2	8	4	2	4	2	2	32	3	1	25	5	
Magnesium	mg/L	6	1	<1	<1	4	1	<1	1	<1	6	<1	<1	4	129	11	
Sodium	mg/L	52	100	82	75	90	117	117	138	198	78	1850	124	132	1170	81	
Potassium	mg/L	5	22	15	13	18	18	13	17	43	9	592	7	9	75	17	
Aluminium	mg/L	0.01	0.02	0.03	<0.01	<0.01	<0.01	<0.01	0.04	0.02	<0.01	1.94	0.04	0.01	<0.01	<0.01	
Arsenic	mg/L	<0.001	<0.001	<0.001	<0.001	0.004	0.002	0.003	0.001	<0.001	<0.001	0.007	<0.001	<0.001	0.004	<0.001	
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.244	<0.001	<0.001	<0.001	<0.001	
Cobalt	mg/L	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	
Copper	mg/L	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.034	0.001	<0.001	0.144	<0.001	<0.001	0.002	0.005	
Lead	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	
Manganese	mg/L	0.019	0.05	0.035	0.115	0.713	0.015	0.003	0.03	<0.001	0.042	0.041	0.017	0.053	2.69	0.001	
Molybdenum	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.002	0.008	<0.001	0.397	<0.001	<0.001	0.003	<0.001	
Nickel	mg/L	0.003	0.001	<0.001	0.002	0.011	0.001	<0.001	0.003	<0.001	0.003	0.001	<0.001	0.007	0.058	0.001	
Selenium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Silver	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	
Uranium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Vanadium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	
Zinc	mg/L	0.018	<0.005	<0.005	0.006	0.01	0.048	<0.005	0.04	<0.005	0.044	0.021	<0.005	0.005	0.054	0.034	
Boron	mg/L	0.09	0.1	0.1	0.06	0.1	0.12	0.12	0.09	0.15	0.11	0.1	0.07	0.2	0.77	0.13	
Iron	mg/L	<0.05	0.41	0.27	<0.05	2.66	1.4	0.43	0.27	<0.05	0.08	0.44	<0.05	0.71	4.49	<0.05	
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Fluoride	mg/L	<0.1	0.4	0.5	0.4	0.7	0.2	0.2	0.2	1.2	0.2	1.5	0.4	0.1	0.3	<0.1	
Ammonia as N	mg/L	<0.05	0.13	0.23	0.05	0.02	0.17	0.12	<0.01	0.47	<0.01	1.35	0.14	<0.01	0.15	<0.01	
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	
Nitrate as N	mg/L	0.21	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.12	<0.01	0.06	0.04	<0.01	0.07	<0.01	0.16	
Total Phosphorus as P	mg/L	<0.01	0.1	0.18	0.06	<0.01	<0.01	0.08	0.02	<0.01	<0.01	0.2	0.07	<0.01	<0.01	<0.01	
Sulfide as S2-	mg/L	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	
C6 - C9 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
C6 - C10 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
>C10 - C40 Fraction (sum)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	1370	<100	<100	140	<100	
Sum of BTEX	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	

	Sample Type:	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	
	Sample Date:	12/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	13/12/2020	13/12/2020	13/12/2020
	Client sample ID (1st):	C14002SP	C180119SP	C9180125SP	C180120SP	C18004SP	C18006SP	C18005SP	C18009SP	Duplicate D	C19022SP	C14004SP	C14003SP	C19008SP	C19007SP	C14011SP	
	Hydro-stratigraphic unit:	Joe-Joe	Joe-Joe	Joe-Joe	Composite Bor	Alluvium	Alluvium	Alluvium	Alluvium		Tertiary	Joe Joe	Joe Joe		Dunda Beds	Clematis Sst	
Analyte grouping/Analyte	Unit																
pH Value	pH Unit	7.34	6.74	8.36	6.62	7.17	7.21	7.12	7.54	7.54	7.28	7.34	6.55	11.7	8.15	6.09	
Electrical Conductivity @ 25°C	µS/cm	11200	675	867	7770	40700	61600	53200	25800	25500	43600	52700	53200	6160	1250	229	
Total Dissolved Solids @180°C	mg/L	6780	379	478	4520	33300	47900	46600	14700	19100	38000	53200	46200	2980	758	144	
Total Alkalinity as CaCO3	mg/L	125	44	263	42	194	219	189	80	79	234	85	67	1080	156	10	
Sulfate as SO4 - Turbidimetric	mg/L	370	6	<1	166	803	2960	2310	944	927	2320	2080	2470	11	21	5	
Chloride	mg/L	3660	185	120	2450	14900	22600	19700	8500	8780	16100	19300	19800	895	327	58	
Calcium	mg/L	299	4	10	101	3170	2260	2560	1860	1800	2190	3020	2500	91	13	1	
Magnesium	mg/L	120	4	4	149	1350	1610	1410	429	413	1210	1390	1610	4	3	5	
Sodium	mg/L	2050	118	177	1320	4720	11400	9360	3500	3390	7630	8930	8840	842	248	35	
Potassium	mg/L	37	4	5	35	24	34	21	29	29	34	55	34	117	10	3	
Aluminium	mg/L	<0.01	<0.01	<0.01	0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	2.22	0.08	0.01	
Arsenic	mg/L	0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.006	<0.002	0.004	0.002	0.002	<0.001	
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	0.0003	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	
Chromium	mg/L	<0.001	<0.001	<0.001	0.001	<0.002	<0.002	<0.002	0.013	0.013	0.002	<0.002	<0.002	0.019	<0.001	<0.001	
Cobalt	mg/L	<0.001	<0.001	<0.001	0.002	<0.002	0.011	0.015	<0.001	<0.001	0.006	0.003	0.034	<0.001	<0.001	0.002	
Copper	mg/L	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	0.048	0.001	<0.001	<0.002	<0.002	<0.002	0.007	<0.001	0.018	
Lead	mg/L	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.002	0.002	<0.001	<0.001	
Manganese	mg/L	0.975	0.01	0.044	0.007	0.085	0.9	1.52	0.033	0.033	2.34	7.08	2.11	0.063	0.077	0.012	
Molybdenum	mg/L	<0.001	<0.001	<0.001	<0.001	<0.002	0.008	0.007	0.029	0.03	<0.002	<0.002	<0.002	0.17	0.045	0.002	
Nickel	mg/L	0.002	<0.001	<0.001	0.006	0.017	0.023	0.056	0.008	0.008	0.036	0.004	0.032	0.003	0.002	0.004	
Selenium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	
Silver	mg/L	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	0.017	<0.002	<0.002	<0.001	<0.001	<0.001	
Uranium	mg/L	<0.001	<0.001	<0.001	<0.001	0.033	0.053	0.09	0.009	0.008	0.012	<0.002	<0.002	<0.001	<0.001	<0.001	
Vanadium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.01	<0.01	<0.01	
Zinc	mg/L	<0.005	0.578	0.018	0.765	0.011	<0.010	0.104	0.011	0.011	<0.010	0.037	0.022	0.066	0.063	0.094	
Boron	mg/L	0.98	0.15	0.25	0.51	1.28	5.46	4.78	1.17	1.16	3.73	0.45	3.11	0.13	0.07	0.1	
Iron	mg/L	2.66	0.77	<0.05	0.15	<0.10	0.35	0.15	0.05	0.05	7.16	0.63	14.2	2.02	<0.05	<0.05	
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Fluoride	mg/L	0.2	0.1	0.5	0.3	0.2	0.2	<0.1	0.4	0.4	0.3	0.1	0.2	1.6	0.6	<0.1	
Ammonia as N	mg/L	0.3	0.04	0.07	<0.01	0.14	0.13	0.18	0.04	0.02	0.14	1.81	0.48	0.68	0.32	<0.01	
Nitrite as N	mg/L	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Nitrate as N	mg/L	<0.01	<0.01	<0.01	0.22	0.02	<0.01	0.01	0.17	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	0.42	
Total Phosphorus as P	mg/L	0.05	0.02	0.03	0.01	0.08	0.26	0.37	0.04	0.04	0.1	0.12	0.22	0.1	0.06	<0.01	
Sulfide as S2-	mg/L	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	
C6 - C9 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20	<20	<20	
C6 - C10 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20	<20	<20	
>C10 - C40 Fraction (sum)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	220	<100	
Sum of BTEX	µg/L	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	14	<1	<1	

