

**Adani Carmichael Coal Mine Project**

**Groundwater Quality data**

**June 2021**









Sample Type:	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	
Sample Date:	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	07/06/2021	
Client sample ID (1st):	C18010SP	Moses Spring	C18014SP	Little Moses Sprin	HD03A	HD03B	HD02	C19014SP	C19015SP	C919016SPR	C19017SP	C19018SP	C14012SP	C14013SP	C14011SP	
Hydro-stratigraphic unit:	DSC Spearpoint		DSC Spearpoint		Clematis SSt	Alluvium	Clematis SSt	Clematis SSt	Dunda Beds	Rewan	Rewan	Bandanna	Clematis Sst	Clematis Sst	Clematis Sst	
Analyte grouping/Analyte	Unit															
pH Value	pH Unit	7.05	7.38	6.86	6.59	7.44	7.44	7.4	8.4	8.16	8.64	12.2	12.2	7.56	5.65	5.7
Electrical Conductivity @ 25°C	µS/cm	633	534	630	551	720	776	400	656	714	766	6020	6550	508	420	260
Total Dissolved Solids @180°C	mg/L	348	337	370	309	408	443	254	401	415	424	1660	1820	299	241	196
Total Alkalinity as CaCO3	mg/L	201	145	104	28	114	130	83	152	148	203	1220	1210	138	10	10
Sulfate as SO4 - Turbidimetric	mg/L	<1	<1	1	6	11	10	2	<1	<1	<1	18	107	5	10	5
Chloride	mg/L	77	76	134	150	150	161	69	116	139	121	199	203	69	108	61
Calcium	mg/L	9	<1	4	2	4	2	2	2	3	3	87	147	3	1	1
Magnesium	mg/L	2	<1	18	10	2	2	2	<1	<1	<1	<1	<1	2	9	5
Sodium	mg/L	122	111	78	78	131	143	72	133	143	159	552	438	96	55	35
Potassium	mg/L	12	9	12	10	14	15	9	7	5	3	41	251	7	6	2
Aluminium	mg/L	<0.01	0.02	<0.01	0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.04	2.88	0.63	<0.01	<0.01	<0.01
Arsenic	mg/L	0.006	<0.001	<0.001	<0.001	<0.001	0.003	0.006	<0.001	<0.001	0.001	0.003	0.005	<0.001	<0.001	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/L	0.002	<0.001	0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	0.002
Copper	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.002	<0.001	0.006	0.006
Lead	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
Manganese	mg/L	0.159	0.001	0.108	0.016	0.435	0.326	0.465	0.014	0.056	0.031	0.01	0.002	0.004	0.021	0.014
Molybdenum	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	0.084	0.278	0.004	<0.001	<0.001
Nickel	mg/L	0.02	<0.001	0.005	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	0.004	<0.001	0.01	0.004
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	<0.001	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/L	0.042	<0.005	<0.005	<0.005	0.023	0.008	0.005	<0.005	<0.005	0.028	0.011	0.581	<0.005	0.043	0.015
Boron	mg/L	0.1	0.08	0.11	0.12	0.12	0.14	0.05	0.07	0.08	<0.05	<0.05	0.08	0.1	0.11	0.08
Iron	mg/L	8.2	<0.05	2.42	0.22	0.64	1.39	1.54	<0.05	<0.05	<0.05	0.22	<0.05	<0.05	<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	0.3	0.2	0.1	0.2	0.4	0.2	0.4	0.5	0.3	1.1	1.8	0.5	<0.1	<0.1
Ammonia as N	mg/L	<0.01	<0.01	2.2	<0.01	0.13	0.1	0.1	0.09	0.13	0.2	6.96	1.73	<0.01	<0.01	<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	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.03	0.66	0.43
Total Phosphorus as P	mg/L	0.17	0.1	0.49	0.02	0.1	0.12	0.12	0.23	0.04	0.05	0.15	0.03	0.08	0.08	0.06
Sulfide as S2-	mg/L	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1
C6 - C9 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	30	<20	<20	<20	<20
C6 - C10 Fraction	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	30	<20	<20	<20	<20
>C10 - C40 Fraction (sum)	µg/L	<100	<100	150	<100	<100	<100	<100	<100	<100	<100	1000	510	<100	<100	<100
Sum of BTEX	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1







Sample Type:	REG	REG	REG	REG	REG	REG	REG	REG	REG				
Sample Date:	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021				
Client sample ID (1st):	C007P2	C555P1	C008P2	C19010SP	C19011SP	C19012SP	C919013SPR	C14003SP					
Hydro-stratigraphic unit:	Bandanna	Rewan	Bandanna	Clematis SSt	Dunda Beds	Rewan	Rewan	Joe Joe					
Analyte grouping/Analyte	Unit												
pH Value	pH Unit	7.35	7.59	8.13	8.36	8.42	12.4	12	6.39				
Electrical Conductivity @ 25°C	µS/cm	16100	860	2750	648	804	14100	5440	53500				
Total Dissolved Solids @180°	mg/L	9790	492	1520	361	546	5250	2220	41250				
Total Alkalinity as CaCO3	mg/L	243	135	428	167	145	2720	2040	65				
Sulfate as SO4 - Turbidimetric	mg/L	412	<1	86	<1	<1	245	78	2360				
Chloride	mg/L	5100	181	608	97	166	781	563	20400				
Calcium	mg/L	379	6	27	2	3	<1	38	2590				
Magnesium	mg/L	306	7	16	<1	<1	<1	<1	1560				
Sodium	mg/L	2590	144	545	129	159	1550	1550	9270				
Potassium	mg/L	42	8	8	6	4	399	405	28				
Aluminium	mg/L	<0.01	<0.01	<0.01	0.02	0.01	0.71	0.72	<0.05				
Arsenic	mg/L	<0.001	0.003	<0.001	<0.001	<0.001	0.007	0.006	<0.005				
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0005				
Chromium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.057	0.057	<0.005				
Cobalt	mg/L	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.036				
Copper	mg/L	0.007	<0.001	0.006	<0.001	<0.001	0.065	0.064	<0.005				
Lead	mg/L	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.005				
Manganese	mg/L	0.236	0.228	0.046	0.016	0.036	0.006	0.005	2.36				
Molybdenum	mg/L	<0.001	<0.001	0.001	<0.001	0.004	0.424	0.392	<0.005				
Nickel	mg/L	<0.001	0.002	0.007	<0.001	<0.001	0.002	0.002	0.022				
Selenium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05				
Silver	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005				
Uranium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005				
Vanadium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05				
Zinc	mg/L	0.014	0.031	0.155	0.01	<0.005	<0.005	<0.005	0.084				
Boron	mg/L	0.56	0.23	0.21	0.06	<0.05	0.1	0.1	2.47				
Iron	mg/L	1.72	1.8	0.14	<0.05	<0.05	0.07	0.08	17.1				
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001				
Fluoride	mg/L	393	0.5	0.8	0.4	0.3	1.6	1	0.2				
Ammonia as N	mg/L	1.49	0.06	1.26	0.16	0.22	2.94	2.79	0.65				
Nitrite as N	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01				
Nitrate as N	mg/L	<0.01	<0.01	<0.01	0.02	0.01	0.02	0.01	<0.01				
Total Phosphorus as P	mg/L	<0.05	0.06	0.01	0.21	0.01	0.08	3.76	<0.10				
Sulfide as S2-	mg/L	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1				
C6 - C9 Fraction	µg/L	<20	<20	<20	<20	<20	<20	30	<20				
C6 - C10 Fraction	µg/L	<20	<20	<20	<20	<20	<20	30	<20				
>C10 - C40 Fraction (sum)	µg/L	<100	<100	<100	<100	<100	1350	11000	<100				
Sum of BTEX	µg/L	<1	<1	<1	<1	<1	6	1	<1				