

ENVIRONMENT PROTECTION LICENCE 20350 MONITORING DATA

Licence Holder: Santos NSW (Eastern) Pty Ltd
Premises: Narrabri Gas Field
X-Line Road, Narrabri NSW 2390

Licence No: 20350

EPL LINK: <https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=20350>

EPL Period: May 1st 2022 to April 30th 2023

Reporting Period: Quarter 1 - MAY 2022 - JULY 2022

Published Date: Aug-22

Monitoring Location: Refer to Table 1

Scheduled Activity: Coal seam gas exploration, assessment and production

General Notes:

Monitoring Point 80, 81 & 82 - no sample required in accordance with EPL20350 Condition M2.11

Monitoring Point 77 - no sample required in accordance with EPL20350 Condition M2.7

Monitoring Point 69, 70 & 76 - no sample required in accordance with EPL20350 Condition M2.8 & M2.9

Monitoring Point 83, 84, 85 & 86 - no sample required in accordance with EPL20350 Condition M2.11

Monitoring point 18 - The bore is sealed shut and unable to open. Historically dry.

Monitoring points visited and reported dry : 26, 38, 39, 40, 43,66&78

Monitoring points visited with insufficient recharge to collect a lab sample: 28 & 62

Monitoring points 47, 48 and 49: no water level results available. Repairs and maintenance being investigated.

EPA Identification No.	Location	Monitoring Type	LATITUDE	LONGITUDE
EPA ID 10	BWD26PRLPS02	MONITORING BORE	-30.62235754	149.6014509
EPA ID 11	DWH14PRUPS01	MONITORING WELL	-30.54892377	149.7593231
EPA ID 12	DWH14PRLPS02	MONITORING WELL	-30.54916522	149.7591818
EPA ID 13	DWH14PRPUR03	MONITORING BORE	-30.5490445	149.7592524
EPA ID 14	DWH3PRUPS01	MONITORING BORE	-30.65363088	149.7365671
EPA ID 15	DWH3PRLPS02	MONITORING BORE	-30.65353767	149.7367105
EPA ID 18	BWD27PRORA01	MONITORING BORE	-30.66338611	149.6658255
EPA ID 20	BHN14PRORA01	MONITORING WELL	-30.47186	149.574455
EPA ID 21	BHN14PRUPS02	VIBRATING WIRE PIEZO	-30.471734	149.574398
EPA ID 26	BWDMW12S	MONITORING WELL	-30.631887	149.64828
EPA ID 27	BWDMW12D	MONITORING WELL	-30.631878	149.648293
EPA ID 28	BWDMW12I	MONITORING WELL	-30.631891	149.648302
EPA ID 37	LWDMW1D	MONITORING BORE	-30.491237	149.619021
EPA ID 38	LWDMW1S	MONITORING BORE	-30.491241	149.619031
EPA ID 39	LWDMW1I	MONITORING BORE	-30.491247	149.619049
EPA ID 40	LWDMW2S	MONITORING BORE	-30.505449	149.616432
EPA ID 41	LWDMW2D	MONITORING BORE	-30.505448	149.616422
EPA ID 42	LWDMW3D	MONITORING BORE	-30.506452	149.624514
EPA ID 43	LWDMW3S	MONITORING BORE	-30.506442	149.624517
EPA ID 44	DWH8AQGDGY01	MONITORING BORE	-30.550156	149.768324
EPA ID 45	DWH8AQGARK02	MONITORING BORE	-30.550156	149.768324
EPA ID 46	DWH8AQGPOR03	MONITORING BORE	-30.550156	149.768324
EPA ID 47	BWD28QGUPS01	MONITORING BORE	-30.6680169	149.6400693
EPA ID 48	BWD28QGLPS01	MONITORING BORE	-30.6680169	149.6400693
EPA ID 49	BWD28QGUPUR01	MONITORING BORE	-30.6680169	149.6400693
EPA ID 56	WPKMW9D	MONITORING BORE	-30.363006	149.66006
EPA ID 57	WPKMW9S	MONITORING BORE	-30.362985	149.660074
EPA ID 59	WPKMW13I	MONITORING BORE	-30.361215	149.658864
EPA ID 60	WPKMW13S	MONITORING BORE	-30.361219	149.658887
EPA ID 61	WPKMW14D	MONITORING BORE	-30.362521	149.656942
EPA ID 62	WPKMW14S	MONITORING BORE	-30.362528	149.656945
EPA ID 63	WPKMW15D	MONITORING BORE	-30.36086	149.656908
EPA ID 64	WPKMW15S	MONITORING BORE	-30.360883	149.656908
EPA ID 65	WPKMW16D	MONITORING BORE	-30.363133	149.653698
EPA ID 66	WPKMW16S	MONITORING BORE	-30.36315	149.653694
EPA ID 69	BWDPD2	POND	-30.6337	149.6493
EPA ID 7	BWD27PRUPS02	MONITORING BORE	-30.66325391	149.6658598
EPA ID 70	BWDPD3	POND	-30.6324	149.6489
EPA ID 71	LWDPD1CELL4	POND	-30.494372	149.619995
EPA ID 72	LWDPD1CELL3	POND	-30.496082	149.619909
EPA ID 73	LWDPD1CELL2	POND	-30.497881	149.619617
EPA ID 74	LWDPD1CELL1	POND	-30.499596	149.619269
EPA ID 75	TFDPD1	POND	-30.3618	149.6595
EPA ID 75	TFDPD1(1)	DAM	-30.36196525	149.6595504
EPA ID 75	TFDPD1(2)	DAM	-30.36245825	149.6595151
EPA ID 76	TFDPD2	POND	-30.3613	149.6583
EPA ID 77	LWWTPDM1	PERMEATE DAM	-30.503394	149.622056
EPA ID 78	WPKMW18S	MONITORING BORE	-30.36193	149.662952
EPA ID 79	WPKMW18I	MONITORING BORE	-30.361893	149.662963
EPA ID 8	BWD27PRLPS03	MONITORING BORE	-30.66312744	149.6658851
EPA ID 80	LWDMW4	MONITORING BORE	-30.49852	149.62643
EPA ID 81	LWDMW5	MONITORING BORE	-30.49607	149.63064
EPA ID 82	LWDMW6	MONITORING BORE	-30.49726	149.63251
EPA ID 83	LWDSMP1	SOIL	-30.49943	149.625015
EPA ID 84	LWDSMP2	SOIL	-30.497557	149.627274
EPA ID 85	LWDSMP3	SOIL	-30.497629	149.631531
EPA ID 86	LWDSMP4	SOIL	-30.500917	149.630417
EPA ID 9	BWD26PRUPS01	MONITORING BORE	-30.62224078	149.6015298

Note

Monitoring points removed in accordance with (EPL) 23050 amended 11th April 2021 (16, 17, 22, 23, 24, 25, 29, 30, 31, 32, 33, 34, 35, 36, 50, 51, 52, 53, 55, 58, 67 and 68)

TABLE 2: GROUNDWATER QUALITY MONITORING

		EPA Identification No	7	8	9	10	11	12
		Location	BWD27PRUPS02	BWD27PRLPS03	BWD26PRUPS01	BWD26PRLPS02	DWH14PRUPS01	DWH14PRLPS02
		Date	22/06/2022 10:30	22/06/2022 11:00	22/06/2022 8:30	22/06/2022 9:30	21/06/2022 10:25	21/06/2022 9:30
		Sample Method	in situ	in situ	in situ	in situ	in situ	in situ
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Dissolved Oxygen	mg/L	-	3.7	0.78	4.3	1.1	0.29	1.72
Electrical Conductivity	µS/cm	-	137	216	77	137	220	181
pH	pH Unit	-	5.38	5.83	5.63	6.03	5.7	5.38
Redox Potential	mV	-	3	-55	5	-45	-68	-7
Standing Water Level	mTOC	-	38.99	38.5	29.7	29.15	53.46	54.21

		EPA Identification No	13	14	15	18	20	21
		Location	DWH14PRPUR03	DWH3PRUPS01	DWH3PRLPS02	BWD27PRORA01	BHN14PRORA01	BHN14PRUPS02
		Date	21/06/2022 9:30	21/06/2022 12:55	21/06/2022 13:30		22/06/2022 8:30	21/06/2022 16:30
		Sample Method	in situ	in situ	in situ	No sample - dry	in situ	No sample available
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Dissolved Oxygen	mg/L	-	0.63	1.81	0.5		0.99	0.81
Electrical Conductivity	µS/cm	-	728	122	135		517	457
pH	pH Unit	-	7.13	5.11	5.32		6.65	7.07
Redox Potential	mV	-	-150	-9	-28		-77	-56
Standing Water Level	mTOC	-	53.58	67.5	68.68		26.44	15.14

		EPA Identification No	10	11	12	13	14	15	20	21	
		Location	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S	BWDMW12S
		Date	22/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022	22/06/2022	21/06/2022
		Sample Method	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	
Aluminium	mg/L	0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	
Ammonia as N	mg/L	0.01	0.09	<0.01	<0.01	2.74	<0.01	<0.01	0.06	0.06	
Arsenic	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	
Barium	mg/L	0.001	0.737	0.226	0.066	0.514	0.036	0.053	0.631	0.482	
Beryllium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Bicarbonate Alkalinity as CaCO3	mg/L	1	33	47	27	297	16	31	204	216	
Boron	mg/L	0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	0.06	<0.05	
Bromide	mg/L	0.01	0.061	0.114	0.11	0.091	0.062	0.062	0.107	0.054	
Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Calcium	mg/L	1	2	2	2	36	<1	<1	38	45	
Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1	<1	<1	<1	<1	
Chloride	mg/L	1	19	37	36	36	23	22	36	19	
Chromium	mg/L	0.001	<0.001	<0.001	0.003	0.002	0.012	<0.001	<0.001	<0.001	
Cobalt	mg/L	0.001	0.014	0.004	0.005	<0.001	0.005	0.002	0.002	<0.001	
Copper	mg/L	0.001	<0.001	0.006	0.006	<0.001	0.007	0.009	<0.001	<0.001	
Dissolved Oxygen	mg/L	-	1.1	0.29	1.72	0.63	1.81	0.5	0.99	0.81	
Electrical Conductivity	µS/cm	-	137	220	181	728	122	135	517	457	
Fluoride	mg/L	0.1	0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.2	0.2	
Iron	mg/L	0.05	<0.05	<0.05	<0.05	1.33	<0.05	<0.05	0.09	1.97	
Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Magnesium	mg/L	1	2	5	2	1	2	1	10	9	
Manganese	mg/L	0.001	0.047	0.07	0.051	0.16	0.036	0.028	0.224	0.08	
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Methane	mg/L	0.01	<0.01	0.02	<0.01	7.18	<0.01	<0.01	0.032	1.45	
Molybdenum	mg/L	0.001	<0.001	<0.001	0.003	0.005	<0.001	<0.001	0.002	0.006	
Nickel	mg/L	0.001	0.014	0.32	0.152	0.002	0.137	0.086	0.12	0.002	
Nitrate as N	mg/L	0.01	0.04	0.13	<0.01	<0.01	0.08	0.01	<0.01	0.05	
Nitrite as N	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
pH	pH Unit	-	6.03	5.7	5.38	7.13	5.11	5.32	6.65	7.07	
Potassium	mg/L	1	13	8	4	23	2	2	4	6	
Reactive Phosphorus	mg/L	0.01	<0.01	<0.01	<0.01	0.2	<0.01	<0.01	<0.01	<0.01	
Redox Potential	mV	-	-45	-68	-7	-150	-9	-28	-77	-56	
Selenium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Sodium	mg/L	1	16	30	28	110	20	23	58	50	
Standing Water Level	mbTOC	-	29.15	53.46	54.21	53.58	67.5	68.68	26.44	15.14	
Strontium	mg/L	0.001	0.062	0.05	0.019	0.953	0.006	0.014	0.531	0.481	
Sulfate as SO4 2-	mg/L	1	5	<1	1	1	2	2	4	4	
Total Dissolved Solids @180°C	mg/L	10	79	111	93	456	88	99	328	309	
Uranium	mg/L	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	
Zinc	mg/L	0.005	0.009	0.011	0.012	<0.005	0.007	0.005	<0.005	0.008	

		EPA Identification No	27	28	37	38	39	40	41
		Location	BWDMW12D	BWDMW12I	LWDMW1D	LWDMW1S	LWDMW1I	LWDMW2S	LWDMW2D
		Date	20/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
		Sample Method	Grab Sample	No sample - dry	Grab Sample	No sample - dry	No sample - dry	No sample - dry	Grab Sample
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Aluminium	mg/L	0.01	<0.01	-	<0.01	-	-	-	<0.01
Ammonia as N	mg/L	0.01	0.03	-	0.04	-	-	-	0.15
Arsenic	mg/L	0.001	<0.001	-	<0.001	-	-	-	0.001
Barium	mg/L	0.001	0.966	-	0.41	-	-	-	0.597
Beryllium	mg/L	0.001	<0.001	-	<0.001	-	-	-	<0.001
Bicarbonate Alkalinity as CaCO3	mg/L	1	1600	-	184	-	-	-	427
Boron	mg/L	0.05	<0.05	-	0.15	-	-	-	0.11
Bromide	mg/L	0.01	3.16	-	1.28	-	-	-	0.78
Cadmium	mg/L	0.0001	<0.0001	-	<0.0001	-	-	-	<0.0001
Calcium	mg/L	1	17	-	7	-	-	-	19
Carbonate Alkalinity as CaCO3	mg/L	1	<1	-	<1	-	-	-	<1
Chloride	mg/L	1	803	-	684	-	-	-	480
Chromium	mg/L	0.001	<0.001	-	<0.001	-	-	-	0.001
Cobalt	mg/L	0.001	0.004	-	<0.001	-	-	-	<0.001
Copper	mg/L	0.001	<0.001	-	<0.001	-	-	-	<0.001
Dissolved Oxygen	mg/L	-	3.01	-	1.32	-	-	-	0.4
Electrical Conductivity	µS/cm	-	5139	-	2281	-	-	-	2048
Fluoride	mg/L	0.1	0.6	-	0.3	-	-	-	0.4
Iron	mg/L	0.05	0.53	-	<0.05	-	-	-	0.26
Lead	mg/L	0.001	<0.001	-	<0.001	-	-	-	<0.001
Magnesium	mg/L	1	157	-	14	-	-	-	25
Manganese	mg/L	0.001	0.036	-	0.003	-	-	-	0.042
Mercury	mg/L	0.0001	<0.0001	-	<0.0001	-	-	-	<0.0001
Methane	mg/L	0.01	<0.01	-	<0.01	-	-	-	<0.01
Molybdenum	mg/L	0.001	<0.001	-	<0.001	-	-	-	0.003
Nickel	mg/L	0.001	0.002	-	<0.001	-	-	-	0.004
Nitrate as N	mg/L	0.01	0.16	-	0.09	-	-	-	0.01
Nitrite as N	mg/L	0.01	<0.01	-	<0.01	-	-	-	<0.01
pH	pH Unit	-	6.85	-	6.34	-	-	-	6.74
Potassium	mg/L	1	35	-	13	-	-	-	26
Reactive Phosphorus	mg/L	0.01	<0.01	-	0.07	-	-	-	0.11
Redox Potential	mV	-	-1	-	-12	-	-	-	-47
Selenium	mg/L	0.01	0.01	-	<0.01	-	-	-	<0.01
Sodium	mg/L	1	993	-	414	-	-	-	369
Standing Water Level	mbTOC	-	30.97	-	30	-	-	-	25.98
Strontium	mg/L	0.001	0.444	-	0.118	-	-	-	0.225
Sulfate as SO4 2-	mg/L	1	68	-	15	-	-	-	12
Total Dissolved Solids @180°C	mg/L	10	3040	-	1320	-	-	-	1180
Uranium	mg/L	0.001	0.011	-	<0.001	-	-	-	0.001
Vanadium	mg/L	0.01	<0.01	-	<0.01	-	-	-	<0.01
Zinc	mg/L	0.005	<0.005	-	<0.005	-	-	-	<0.005

		EPA Identification No	42	43	56	57	59	60	61	62
		Location	LWDMW3D	LWDMW3S	WPKMW9D	WPKMW9S	WPKMW13I	WPKMW13S	WPKMW14D	WPKMW14S
		Date	15/06/2022	14/06/2022	14/06/2022	14/06/2022	14/06/2022	14/06/2022	14/06/2022	14/06/2022
		Sample Method	Grab Sample	No sample - dry	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	No sample - dry
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Aluminium	mg/L	0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
Ammonia as N	mg/L	0.01	0.84	-	0.22	1.02	0.01	0.01	0.01	-
Arsenic	mg/L	0.001	0.001	-	0.004	0.004	0.001	0.002	0.002	-
Barium	mg/L	0.001	0.074	-	0.084	0.19	0.042	0.106	0.325	-
Beryllium	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Bicarbonate Alkalinity as CaCO3	mg/L	1	117	-	541	1480	573	1120	543	-
Boron	mg/L	0.05	0.09	-	0.21	0.36	0.22	0.32	0.2	-
Bromide	mg/L	0.01	0.448	-	0.165	1.1	0.2		0.164	-
Cadmium	mg/L	0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	1	2	-	4	8	4	4	7	-
Carbonate Alkalinity as CaCO3	mg/L	1	<1	-	<1	<1	<1	<1	<1	-
Chloride	mg/L	1	273	-	64	370	82	478	63	-
Chromium	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Cobalt	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Copper	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Dissolved Oxygen	mg/L	-	0.52	-	0.35	0.26	0.46	0.65	0.66	-
Electrical Conductivity	µS/cm	-	955	-	1230	3727	1299	3259	1050	-
Fluoride	mg/L	0.1	0.2	-	0.8	0.7	0.6	0.8	0.5	-
Iron	mg/L	0.05	0.69	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
Lead	mg/L	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Magnesium	mg/L	1	4	-	1	3	<1	1	2	-
Manganese	mg/L	0.001	0.008	-	0.01	0.057	0.004	0.011	0.007	-
Mercury	mg/L	0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
Methane	mg/L	0.01	0.771	-	<0.01	0.42	<0.01	<0.01	<0.01	-
Molybdenum	mg/L	0.001	<0.001	-	0.001	<0.001	<0.001	0.003	<0.001	-
Nickel	mg/L	0.001	0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-
Nitrate as N	mg/L	0.01	0.02	-	0.02	<0.01	0.03	<0.01	0.04	-
Nitrite as N	mg/L	0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
pH	pH Unit	-	6.24	-	8.3	7.7	7.87	7.38	8	-
Potassium	mg/L	1	10	-	3	9	4	9	4	-
Reactive Phosphorus	mg/L	0.01	0.34	-	0.25	0.63	0.28	0.26	0.2	-
Redox Potential	mV	-	-133	-	-82	-22	-26	-22	-19.8	-
Selenium	mg/L	0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
Sodium	mg/L	1	170	-	280	880	294	720	260	-
Standing Water Level	mbTOC	-	21.08	-	15.42	15.72	16.8	16.98	20.92	-
Strontium	mg/L	0.001	0.024	-	0.056	0.099	0.02	0.047	0.042	-
Sulfate as SO4 2-	mg/L	1	3	-	<1	30	<1		<1	-
Total Dissolved Solids @180°C	mg/L	10	630	-	814	2340	817	2000	774	-
Uranium	mg/L	0.001	<0.001	-	<0.001	0.003	<0.001	0.001	<0.001	-
Vanadium	mg/L	0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
Zinc	mg/L	0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-

		EPA Identification No		63	64	65	79	80	81	82
		Location		WPKMW15D	WPKMW15S	WPKMW16D	WPKMW18I	LWDMW4	LWDMW5	LWDMW6
		Date		14/06/2022	14/06/2022	14/06/2022	6/06/2021			
		Sample Method		Grab Sample	Grab Sample	Grab Sample	Grab Sample	No sample no irrigation	No sample no irrigation	No sample no irrigation
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Aluminium	mg/L	0.01	<0.01	0.07	<0.01	<0.01	-	-	-	-
Ammonia as N	mg/L	0.01	0.07	<0.01	0.02	<0.01	-	-	-	-
Arsenic	mg/L	0.001	0.003	0.003	0.002	<0.001	-	-	-	-
Barium	mg/L	0.001	0.387	2.1	0.202	0.106	-	-	-	-
Beryllium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
Bicarbonate Alkalinity as CaCO3	mg/L	1	627	4000	546	509	-	-	-	-
Boron	mg/L	0.05	0.16	0.69	0.09	0.23	-	-	-	-
Bromide	mg/L	0.01	0.174		0.187	0.578	-	-	-	-
Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-
Calcium	mg/L	1	6	7	6	2	-	-	-	-
Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1	-	-	-	-
Chloride	mg/L	1	65	963	73	73	-	-	-	-
Chromium	mg/L	0.001	<0.001	0.013	<0.001	<0.001	-	-	-	-
Cobalt	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
Copper	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
Dissolved Oxygen	mg/L	-	0.63	2.31	0.94	2.01	-	-	-	-
Electrical Conductivity	µS/cm	-	1292	8835	966	1191	-	-	-	-
Fluoride	mg/L	0.1	0.4	1.1	0.5	0.6	-	-	-	-
Iron	mg/L	0.05	0.18	<0.05	<0.05	<0.05	-	-	-	-
Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
Magnesium	mg/L	1	2	12	2	<1	-	-	-	-
Manganese	mg/L	0.001	0.057	<0.001	0.05	0.006	-	-	-	-
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-
Methane	mg/L	0.01	0.264	<0.01	0.015	<0.01	-	-	-	-
Molybdenum	mg/L	0.001	0.008	0.003	0.005	0.001	-	-	-	-
Nickel	mg/L	0.001	0.002	0.001	0.001	0.002	-	-	-	-
Nitrate as N	mg/L	0.01	<0.01	0.44	<0.01	0.86	-	-	-	-
Nitrite as N	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-
pH	pH Unit	-	7.79	7.7	7.8	8.06	-	-	-	-
Potassium	mg/L	1	8	31	11	5	-	-	-	-
Reactive Phosphorus	mg/L	0.01	0.3	0.6	0.26	-	-	-	-	-
Redox Potential	mV	-	-51	-18	-47	18.1	-	-	-	-
Selenium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-
Sodium	mg/L	1	283	2120	280	298	-	-	-	-
Standing Water Level	mbTOC	-	22.18	22.44	26.54	16.325	-	-	-	-
Strontium	mg/L	0.001	0.049	0.268	0.053	0.017	-	-	-	-
Sulfate as SO4 2-	mg/L	1	11	<1	7	<1	-	-	-	-
Total Dissolved Solids @180°C	mg/L	10	918	5980	822	822	-	-	-	-
Uranium	mg/L	0.001	<0.001	0.003	0.004	<0.001	-	-	-	-
Vanadium	mg/L	0.01	<0.01	0.02	<0.01	<0.01	-	-	-	-
Zinc	mg/L	0.005	0.012	<0.005	<0.005	<0.005	-	-	-	-

TABLE 3: TREATED WATER QUALITY MONITORING

		EPA Identification No	77	77	77
		Location	LWWTPDM1	LWWTPDM1	LWWTPDM1
		Date	May-22	Jun-22	Jul-22
		Sample Method	No sample - plant not operating	No sample - plant not operating	No sample - plant not operating
Parameter	Units	LOR	RESULT	RESULT	RESULT
Ammonia as N	mg/L	0.01			
Bicarbonate Alkalinity as CaCO3	mg/L	1			
Boron	mg/L	0.05			
Calcium	mg/L	1			
Carbonate Alkalinity as CaCO3	mg/L	1			
Chloride	mg/L	1			
Electrical Conductivity	µS/cm	-			
Fluoride	mg/L	0.1			
Magnesium	mg/L	1			
Nitrate as N	mg/L	0.01			
Nitrite as N	mg/L	0.01			
pH	pH Unit	-			
Potassium	mg/L	1			
Reactive Silica	mg/L	1			
Sodium Adsorption Ratio	-	0.01			
Sodium	mg/L	1			
Sulfate as SO4 2-	mg/L	1			
Total Alkalinity (as CaCO3)	mg/L	1			
Total Dissolved Solids @180°C	mg/L	10			
Total Hardness (as CaCO3)	mg/L	1			
Total Nitrogen (as N)	mg/L	0.5			
Total Phosphorus (as P)	mg/L	0.01			
Total Residual Chlorine	mg/L				
Turbidity	NTU	0.1			

TABLE 4: PRODUCED WATER STORAGE QUALITY MONITORING

		EPA Identification No	69	70	71	72	73	74	75
		Location	BWDP2	BWDP3	LWDPD1CELL4	LWDPD1CELL3	LWDPD1CELL2	LWDPD1CELL1	TFDPD1
		Date			15/06/2022	15/06/2022	15/06/2022	15/06/2022	14/06/2022
		Sample Method	No produced water	No produced water	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample
Parameter	Units	LOR	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT
Aluminium	mg/L	0.1			<0.1	<0.1	<0.1	<0.1	0.15
Ammonia as N	mg/L	0.1			<0.1	0.16	0.15	1.96	<0.1
Arsenic	mg/L	0.01			0.012	<0.01	<0.01	<0.01	<0.01
Barium	mg/L	0.01			0.425	0.832	2.55	8.19	0.632
Beryllium	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Bicarbonate Alkalinity as CaCO3	mg/L	1			9000	8500	10500	9000	200
Boron	mg/L	0.1			5.93	1.33	1.71	1.68	0.18
Bromide	mg/L	0.01			51.2	4.65	7.84	15.4	6.92
Cadmium	mg/L	0.001			<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	mg/L	1			6	8	13	17	3
Carbonate Alkalinity as CaCO3	mg/L	1			58000	11600	13000	15000	7000
Chloride	mg/L	1			-	2430	3220	4110	1870
Chromium	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Copper	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Oxygen	mg/L	-			4.34	5.44	6.2	7.49	6.89
Electrical Conductivity	µS/cm	-			83440	30150	36346	38183	16392
Iron	mg/L	0.1			0.12	<0.1	0.25	0.32	<0.1
Lead	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	mg/L	1			13	12	16	12	<1
Manganese	mg/L	0.01			0.019	<0.01	0.018	0.02	<0.01
Mercury	mg/L	0.0005			<0.0005	-	-	-	-
Molybdenum	mg/L	0.01			0.022	<0.01	<0.01	<0.01	<0.01
Nickel	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate as N	mg/L	0.1			-	<0.1	-	-	-
Nitrite as N	mg/L	0.01			<0.01	-	<0.01	<0.01	<0.01
pH	pH Unit	-			10.09	9.66	9.72	9.71	10.1
Potassium	mg/L	1			864	89	139	268	65
Redox	mV	-			-34	-32	-31	-30	-43
Selenium	mg/L	0.1			<0.1	<0.1	<0.1	<0.1	<0.1
Sodium Adsorption Ratio	-	0.1			1950	517	544	581	625
Sodium	mg/L	1			37100	9900	12400	12800	4440
Strontium	mg/L	0.01			0.659	0.794	1.36	1.96	0.267
Sulfate as SO4 2-	mg/L	1			-	-	150	214	46
Total Dissolved Solids @180°C	mg/L	10			94900	27400	34300	35200	10700
Total Organic Carbon	mg/L	1			57	8	28	29	21
Total Phosphorus as P	mg/L	0.1			3.31	<0.1	0.13	0.61	-
Uranium	mg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	mg/L	0.1			<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	mg/L	0.05			<0.05	<0.05	<0.05	<0.05	<0.05

Note: *Limit of reporting (LOR) has been adjusted due to matrix interference as per Australian Laboratory Services (ALS) certificate of analysis (COA) ES2221041

TABLE 6: GROUNDWATER LEVEL MONITORING

EPA Identification No	44	45	46	47	48	49
Location	Dewhurst 8A-1 (DWH8AQGDGY01)	Dewhurst 8A-2 (DWH8AQGARK02)	Dewhurst 8A-3 (DWH8AQGPOR03)	Biblewindi 28A (BWD28QGUPS01)	Biblewindi 28B (BWD28QGLPS01)	Billbewindi 28C (BWD28QGPUR01)
Start Date	1/05/2022	1/05/2022	1/05/2022	1/05/2022	1/05/2022	1/05/2022
End Date	31/07/2022	31/07/2022	31/07/2022	31/07/2022	31/07/2022	31/07/2022
Sample Obtained	Standing Water Level	Standing Water Level	Standing Water Level	Standing Water Level	Standing Water Level	Standing Water Level
Number of Samples Required	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Lowest sample value	-36.394	16.283	-48.511	-	-	-
Mean of sample	-36.44	16.36	-48.33	-	-	-
Highest sample value	-36.465	16.365	-47.949	-	-	-

Note: Monitoring points 47,48 and 49: Sensor is faulty and data not available since 21 April 2021