Appendix 2.

Department of Primary Industry and Resources (2020b) *Surface and Groundwater Quality Data.*

Department of **Primary Industry and Resources**

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190													594,000							117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985													1,192,000							236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985													997,000							150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472													761,000							117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7													594,000							117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7													594,000							117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)						
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L						
EB@LB	1	East Branch Finniss River at Lease Boundary	30/01/2013			69.9	7.41	20.3		24.76		<5		5.4	200		6		483	<0.02	1.8	0.23	1.02	344	0.3	2.9	18.1	0.58	1	0.398	0.6						
EB@LB	1	East Branch Finniss River at Lease Boundary	11/02/2013		11.67	78.2	6.77																													
EB@LB	1	East Branch Finniss River at Lease Boundary	27/02/2013		15.5	48.7	5.87	22		26.84		<5		4.8	<100		4		124	<0.02	1.3	0.14	0.48	184	0.15	2.1	12.1	0.44	0.4	0.208	0.9						
EB@LB	1	East Branch Finniss River at Lease Boundary	11/03/2013		9.42	53	6.97																													
EB@LB	1	East Branch Finniss River at Lease Boundary	27/03/2013		17.8	43.8	6.15	17		15		<5		3.6	200		5		192	<0.02	1	0.15	0.55	148	0.16	1.7	9.14	0.52	0.8	0.208	1.1						
EB@LB	1	East Branch Finniss River at Lease Boundary	8/04/2013		5.36	50.4	6																													
EB@LB	1	East Branch Finniss River at Lease Boundary	24/04/2013		5.14	56	7.95	25		30.5		<5		4.6	800		4		24.4	<0.02	1.6	0.11	0.26	128	0.09	2.9	12.3	0.13	0.4	0.127	0.7						
EB@LB	1	East Branch Finniss River at Lease Boundary	7/05/2013		4.39	89.5	6.63																													
EB@LB	1	East Branch Finniss River at Lease Boundary	23/05/2013		6.78	77.1	7.66	33		40.26		<5		5.6	200		4		61.3	<0.02	2.1	0.18	0.59	192	0.09	3.9	30	0.26	0.7	0.167	1						
EB@LB	1	East Branch Finniss River at Lease Boundary	3/06/2013		7.15	56	7.3																													
EB@LB	1	East Branch Finniss River at Lease Boundary	18/06/2013		4.76	60.3	7.26	34.8		32		<5		5.8	<100		3		29	<0.02	1.7	0.14	0.25	120	0.04	3.8	18	0.14	0.3	0.107	0.5						
EB@LB	1	East Branch Finniss River at Lease Boundary	1/07/2013		3.61	94.3	6.74																													
EB@LB	1	East Branch Finniss River at Lease Boundary	4/12/2013		30.16	63.5	7.34	26		22		<5		3.1	900		7		442	<0.02	1.6	0.16	2.59	204	0.26	2.8	9.54	0.65	2.1	0.582	1.1						
EB@LB	1	East Branch Finniss River at Lease Boundary	12/12/2013		36.13	73.8	6.39																													
EB@LB	1	East Branch Finniss River at Lease Boundary	8/01/2014		13.4	73	7.01	31.57		33		<5		5.5	200		4		94.1	<0.02	2	0.19	0.81	236	0.11	3.8	21.1	0.2	0.4	0.234	0.3						
EB@LB	1	East Branch Finniss River at Lease Boundary	20/01/2014		24.27	35.5	7.3																													
EB@LB	1	East Branch Finniss River at Lease Boundary	5/02/2014		7.41	22.2	8.18	16		8		<5		2.1	<100		4		56.1	<0.02	0.7	0.06	0.46	94	0.15	0.9	3.72	0.2	0.6	0.097	1.9						
EB@LB	1	East Branch Finniss River at Lease Boundary	14/02/2014		8.65	45.6	6.29																													
EB@LB	1	East Branch Finniss River at Lease Boundary	5/03/2014		6.69	59.5	8.16	18.6		22		<5		4.6	<100		3		95.2	<0.02	1.3	0.12	0.57	192	0.17	2.2	9.13	0.15	0.4	0.115	0.8						
EB@LB	1	East Branch Finniss River at Lease Boundary	18/03/2014		6.32	57.3	6.5																													
EB@LB	1	East Branch Finniss River at Lease Boundary	2/04/2014		5.54	73.5	8.3	34.8		42.456		<5		5.3	<100		3		18.6	<0.02	2.2	0.21	0.58	204	0.09	4	29.4	0.15	0.6	0.128	0.3						
EB@LB	1	East Branch Finniss River at Lease Boundary	29/04/2014		7.37	90.4	8.12	39		36		<5		6.6	200		3		35.2	<0.02	2.2	0.17	0.38	294	0.1	4.3	17.3	0.2	1.1	0.121	0.4						
EB@LB	1	East Branch Finniss River at Lease Boundary	14/05/2014		9.02	139.2	6.54																													
EB@LB	1	East Branch Finniss River at Lease Boundary	24/05/2014		10.67	108.5	6.35	52.8		49		<5		6.9	800		4		22.4	<0.02	3.8	1.08	0.6	314	0.09	7.3	263	0.34	1.3	0.181	0.5						
EB@LB	1	East Branch Finniss River at Lease Boundary	28/05/2014		10.65	145.4	6.32	63		76.86		<5		7.3	3400				2.2	<0.02	4.8	3.4	0.26	370	0.03	8.7	900	0.54	1	0.102	0.7						
EB@LB	1	East Branch Finniss River at Lease Boundary	7/01/2015		31.8	47.3	6.64	18.6		17		<5		4.9	500				561	<0.02	1.3	0.31	1.84	244	0.46	2.1	14.1	0.99	1.4	0.536	16.9						
EB@LB	1	East Branch Finniss River at Lease Boundary	20/01/2015		16.93	71	6.98																													
EB@LB	1	East Branch Finniss River at Lease Boundary	4/02/2015		6.6	54.9	6.47	24.2		22		<5		4.6	200		3		52.2	<0.02	1.3	0.14	0.28	142	0.09	2.3	12.2	0.2	0.4	0.17	3.6						
EB@LB	1	East Branch Finniss River at Lease Boundary	17/02/2015		5.67		7.98																													
EB@LB	1	East Branch Finniss River at Lease Boundary	5/03/2015		7.27	49.7	6.63	20.6		21		<5		4.3	100		6		63.5	<0.02	1.3	0.11	0.24	122	0.07	2.2	9.01	0.19	0.4	0.113	2						
EB@LB	1	East Branch Finniss River at Lease Boundary	18/03/2015		4.3	57.3	7.49																													
EB@LB	1	East Branch Finniss River at Lease Boundary	31/03/2015		5.57	51.5	7.38	23.8		23		<5		4.8	200		3		74	<0.02	1.3	0.12	0.36	156	0.11	2.5	11.4	0.18	0.3	0.123	2.2						
EB@LB	1	East Branch Finniss River at Lease Boundary	16/04/2015		6.75	73.4	7.91																													
EB@LB	1	East Branch Finniss River at Lease Boundary	28/04/2015		2.92	117.4	7.29	48		59		<5		7	200		4		11.6	<0.02	3.8	0.48	0.45	328	0.06	7.5	67.2	0.18	0.6	0.166	0.5						
EB@LB	1	East Branch Finniss River at Lease Boundary	13/05/2015			177.9	7.19																													
EB@LB	1	East Branch Finniss River at Lease Boundary	21/01/2016		17.12	43.9	7.38																													
EB@LB	1	East Branch Finniss River at Lease Boundary	17/02/2016		5.74	37.4	7.09																													
EB@LB	1	East Branch Finniss River at Lease Boundary	3/03/2016		5.65	57.7	7.32	27		24		<5		4.2	<100		2		32.6	<0.02	1.6	0.15	0.26	158	0.08	2.8	15.6	0.19	0.3	0.121	0.8						
EB@LB	1	East Branch Finniss River at Lease Boundary	16/03/2016		5.17	67.9	7.17																													
EB@LB	1	East Branch Finniss River at Lease Boundary	30/03/2016		4.8	57.8	5.48	34.6		28		<5		5.2	100		4		32	<0.02	1.9	0.14	0.3	148	0.08	3.5	16.9	0.17	0.5	0.144	0.8						
EB@LB	1	East Branch Finniss River at Lease Boundary	12/04/2016		3.88	88.5	7.15																													
EB@LB	1	East Branch Finniss River at Lease Boundary	13/05/2016		18.28	105.1	6.93																													
EB@LB	1	East Branch Finniss River at Lease Boundary	30/01/2017	10.4		29.1	7.46				1		7.2	2.4	100		7		158	<0.02	0.8	0.11	0.52	160	0.15	1.1	5.36	0.26	0.7	0.146	4.2						
EB@LB	1	East Branch Finniss River at Lease Boundary	28/02/2017		0	49.8	7.43																													
EB@LB	1	East Branch Finniss River at Lease Boundary	13/03/2017		6.07	43.2	7.25																													
EB@LB	1	East Branch Finniss River at Lease Boundary	27/03/2017			40.93	6.84		16		1.2		7.1	3.8	<100			10.3	49.1	<0.02	1.1	0.2	0.3	158	0.09	1.8	16.1	0.38	0.4	0.13	1.5						
EB@LB	1	East Branch Finniss River at Lease Boundary	10/04/2017			40.93	6.84																													
EB@LB	1	East Branch Finniss River at Lease Boundary	11/04/2017			45.6	6.78																													
EB@LB	1	East Branch Finniss River at Lease Boundary	24/04/2017			50.72	7.69		24		1.3		7.5	4.4	<100			13.2	40.2	<0.02	1.3	0.16	0.24	160	0.1	2.4	17.7	0.15	0.4	0.126	1.7						
EB@LB	1	East Branch Finniss River at Lease Boundary	30/05/2017			167.86	7.32		86		2.3		7.8	6.1	<100		3	72.5	6.4	<0.02	7.5	0.31	1.06	32	0.01	13.1	55.4	0.27	1.1	0.416	1.2						
EB@LB	1	East Branch Finniss River at Lease Boundary	6/06/2017			305.74	6.78																													
EB@LB	1	East Branch Finniss River at Lease Boundary	19/01/2018			48.56	6.49																													
EB@LB	1	East Branch Finniss River at Lease Boundary	15/02/2018			36.45	6.66																													
EB@LB	1	East Branch Finniss River at Lease Boundary	28/02/2018	30.4		33.04	7.06		23		1.1		7.6	3.8	200		2.6	12.1	41.5	<0.02	1.3	0.12	0.34	176	0.14	2.1	11	0.19	0.4	0.155	1.1						
EB@LB	1	East Branch Finniss River at Lease Boundary	14/03/2018			59.8	6.01																													
EB@LB	1	East Branch Finniss River at Lease Boundary	11/04/2018			64.18	7																													
EB@LB	1	East Branch Finniss River at Lease Boundary	23/04/2018			69.97	7.52																													
EB@LB	1	East Branch Finniss River at Lease Boundary	29/01/2019			56.32	6.71		21		1.9		7.2	4.6	400	90	5	13.4	811	<0.02	1.5	0.29	1.17	304	0.33	2.4	14.3	0.58	1.4	0.536	1						
EB@LB	1	East Branch Finniss River at Lease Boundary	4/02/2019			28.28	6.25		13		1.7		7.4	3.4	500	20	3	10.4	216	<0.02	1.3	0.13	0.6	146	0.14	1.8	9.13	0.28	0.9	0.266	2.6						
EB@LB	1	East Branch Finniss River at Lease Boundary	27/02/2019			49.8	7.43				1.2		7.3	4	<100			14.5	63.5	<0.02	1.6	0.13	0.27	150	0.11	2.6	13.1	0.22	0.4	0.162	2.6						
EB@LB	1	East Branch Finniss River at Lease Boundary	20/03/2019			44.55	6.48		13		<2		7.2	3.7	100	20	5	8.9	153	<0.02	1	0.1	0.59	214	0.23	1.6	6.31	0.3	1	0.211	2.5						
EB@LB	1	East Branch Finniss River at Lease Boundary	9/04/2019			110.3	6.94		21		<2		7.1	4.1	200	30	2	11.7	131	0.02	1.3	0.18	0.43	170	0.14	2.1	12	0.21	0.6	0.168	2.7						
EB@LB	1	East Branch Finniss River at Lease Boundary	9/05/2019			47.59	7.21		23		<2		7.6	5.4	100	40	3	13	108	<0.02	1.3	0.12	0.29	114	0.1	2.4	10.1	0.16	0.5	0.102	4.4						
No. of samples				2.0	42.0	62.0	63.0	21.0	9.0	21.0	11.0	21.0	11.0	32.0	32.0	5.0	27.0	10.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0						
Minimum				10.4	0.0	22.2	5.5	16.0	13.0	8.0	1.0	0.0	7.1	2.1	100.0	20.0	2.0	8.9	2.2	0.0	0.7	0.1	0.2	32.0	0.0	0.9	3.7	0.1	0.3	0.1	0.3						
Maximum				30.4	36.1	305.7	8.3	63.0	86.0	76.9	2.3	0.0	7.8	7.3	3400.0	90.0	7.0	72.5	811.0	0.0	7.5	3.4	2.6	370.0	0.5	13.1	900.0	1.0	2.1	0.6	16.9						
Mean				20.4	10.1	70.1	7.0	30.0	26.7	31.1	1.5		7.4	4.7	445.5	40.0	3.9	18.0	133.9	0.0	1.9	0.3	0.6	190.8	0.1	3.4	52.2	0.3	0.7	0.2	2.0						
Standard Deviation				14.1	8.1	44.0	0.6	12.4	22.7	15.7	0.5		0.2	1.2	703.5	29.2	1.4	19.2	184.6		1.4	0.6	0.5	78.0	0.1	2.5	161.2	0.2	0.4	0.1	2.9						
80th Percentile				26.4	15.1	86.4	7.4	34.8	23.4	40.3	1.8		7.6	5.6	500.0	50.0	5.0	13.6	157.0	0.0	2.1	0.2	0.6	242.4	0.2	3.9	20.5	0.4	1.0	0.2	2.6						
FC@LB	1	Fitch Creek at Lease Boundary	15/04/2009			126.4	7.43			536.36					600				40	<0.2	1.9	0.6		200	0.2	10.3	21.1	0.6		0.3	5						
FC@LB	1	Fitch Creek at Lease Boundary	30/01/2013			81.3	7.5	24		29.28		<5		2.8	300				51.8	<0.02	0.9	0.08	0.73	86	0.15	4	6.91	0.23	0.7	0.414	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	11/02/2013		4.24	77.7	6.52																													
FC@LB	1	Fitch Creek at Lease Boundary	27/02/2013		9.13	49.3	6.01	17		20.74		<5		2.7	200		3		48.4	<0.02	0.7	0.1	0.27	84	0.08	3	4.84	0.36	0.5	0.32	0.6						
FC@LB	1	Fitch Creek at Lease Boundary	11/03/2013		4.79	47.8	6.8																													
FC@LB	1	Fitch Creek at Lease Boundary	27/03/2013		8.01	47.5	6.13	14.2		14		<5		2.4	300		3		32.2	<0.02	0.6	0.13	0.43	76	0.09	2.3	5.94	0.41	0.7	0.219	1.3						
FC@LB	1	Fitch Creek at Lease Boundary	8/04/2013		3.34	43.4	5.86																													
FC@LB	1	Fitch Creek at Lease Boundary	24/04/2013		2.85	65.3	7.64	29		35.38		<5		2.7	600		4		15	<0.02	1	0.19	1.22	66	0.1	5.2	5.76	0.35	0.6	0.21	3.6						
FC@LB	1	Fitch Creek at Lease Boundary	8/05/2013		10.22	116.4	6.78																													
FC@LB	1	Fitch Creek at Lease Boundary	23/05/2013		2.86	107.9	8.05	46		56.12		<5		3.2	500		3		27.8	<0.02	1.6	0.19	0.52	62	0.03	8.7	7.28	0.27	0.6	0.266	1.4						

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190													594,000							117				2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985													1,192,000							236				89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985													997,000							150				25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472													761,000							117				3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7													594,000							117				2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7													594,000							117				2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)						
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L						
FC@LB	1	Fitch Creek at Lease Boundary	3/06/2013		6.29	62.8	7.14																													
FC@LB	1	Fitch Creek at Lease Boundary	18/06/2013		2.56	74.9	7.42	30.8		38		<5		3	400		2		18.1	<0.02	1.3	0.17	0.26	60	0.03	6.8	4.73	0.23	0.4	0.216	0.5						
FC@LB	1	Fitch Creek at Lease Boundary	1/07/2013		1.38	91.5	6.78																													
FC@LB	1	Fitch Creek at Lease Boundary	16/07/2013		1.95	100.4	7.3	37.8		35		<5		3.8	900		2		5.9	<0.02	1.3	0.13	1.62	380	0.09	8	6.28	0.52	0.7	0.311	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	4/12/2013		20.27	149.8	7.33	80		62		<5		3.1	400		7		56.6	<0.02	2.3	0.09	1.14	82	0.1	12.3	2.06	0.32	1.4	0.606	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	12/12/2013		23.13	67.8	6.61																													
FC@LB	1	Fitch Creek at Lease Boundary	8/01/2014		7.85	45.8	7.25	14.5		17		<5		3	400		3		39.4	<0.02	0.6	0.14	1.94	116	0.05	2.8	7.31	0.14	0.5	0.309	<0.1						
FC@LB	1	Fitch Creek at Lease Boundary	20/01/2014		16.43	28.3	7.45																													
FC@LB	1	Fitch Creek at Lease Boundary	5/02/2014		5.91	19.2	7.92	10.4		7		<5		1.4	<100		3		34	<0.02	0.5	0.05	0.28	62	0.1	1	3.65	0.11	0.6	0.158	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	14/02/2014		4.16	32	6.92																													
FC@LB	1	Fitch Creek at Lease Boundary	5/03/2014		6.38	57.3	8.25	17.2		21		<5		2.6	200		3		71.9	<0.02	0.7	0.11	0.12	100	0.12	3.4	4.12	0.11	0.6	0.187	0.6						
FC@LB	1	Fitch Creek at Lease Boundary	18/03/2014		3.08	62.3	6.37																													
FC@LB	1	Fitch Creek at Lease Boundary	2/04/2014		1.76	113.6	8.03	52		63.44		<5		2.8	700		2		11.3	<0.02	1.9	0.27	0.69	78	0.03	10.5	12	0.26	0.3	0.263	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	29/04/2014		1.9	179.8	8.02	78.67		75		<5		3.3	500		3		9.9	<0.02	2.5	0.18	0.73	76	0.02	15.8	6.17	0.25	0.5	0.448	0.5						
FC@LB	1	Fitch Creek at Lease Boundary	14/05/2014		2	135.5	6.87																													
FC@LB	1	Fitch Creek at Lease Boundary	23/05/2014		1.88	125.1	7.31	57.8		56		<5		4.4	5000		4		2.5	<0.02	1.8	0.37	0.89	106	0.02	12.4	27.7	0.77	0.8	0.348	0.5						
FC@LB	1	Fitch Creek at Lease Boundary	7/01/2015		7.64	40.3	6.53	17.8		13		<5		2.5	500				124	<0.02	0.8	0.12	0.5	74	0.12	2.6	5.7	0.38	1.2	0.592	3.2						
FC@LB	1	Fitch Creek at Lease Boundary	20/01/2015		34.47	55.6	6.6																													
FC@LB	1	Fitch Creek at Lease Boundary	4/02/2015		3.45	49.8	5.86	18.8		17		<5		2.7	300		2		33.9	<0.02	0.6	0.15	0.98	82	0.14	2.9	5.41	1.1	0.6	0.262	5.9						
FC@LB	1	Fitch Creek at Lease Boundary	5/03/2015		2.71	44.7	6.27	21		15		<5		2.4	200		4		43.6	<0.02	0.6	0.1	0.25	62	0.05	2.6	4.2	0.2	0.5	0.178	3						
FC@LB	1	Fitch Creek at Lease Boundary	18/03/2015		2.1	53.1	7.54																													
FC@LB	1	Fitch Creek at Lease Boundary	31/03/2015		3.55	57.4	7.49	28		25		<5		2.8	400		3		69.4	<0.02	0.9	0.13	0.28	90	0.06	4.5	5.22	0.18	0.2	0.232	2.9						
FC@LB	1	Fitch Creek at Lease Boundary	16/04/2015		3.4	104.8	7.71																													
FC@LB	1	Fitch Creek at Lease Boundary	28/04/2015		1.48	124.7	6.94	84		52		<5		3.5	3300		3		6.5	<0.02	1.6	0.68	0.62	172	0.04	10.3	19.1	0.73	0.4	0.374	0.8						
FC@LB	1	Fitch Creek at Lease Boundary	13/05/2015			122.2	7.53																													
FC@LB	1	Fitch Creek at Lease Boundary	6/01/2016		3.31	35.5	7.62	14.6		12		<5		2.5	200		6		25.8	<0.02	0.6	0.13	0.78	66	0.06	2.6	4.16	0.26	0.8	0.419	1.1						
FC@LB	1	Fitch Creek at Lease Boundary	21/01/2016		6.85	46.1	7.35																													
FC@LB	1	Fitch Creek at Lease Boundary	4/02/2016		3.6	19.8	6.36	8.6		4		1.2		2.1	300		2		39.5	<0.02	0.1	0.09	0.24	62	0.06	0.6	3.75	0.13	0.7	0.303	4.3						
FC@LB	1	Fitch Creek at Lease Boundary	17/02/2016		3.82	30.3	6.89																													
FC@LB	1	Fitch Creek at Lease Boundary	3/03/2016		2.44	56.5	7.15	22.2		23		<5		2.4	400		3		17	<0.02	0.8	0.33	0.48	94	0.04	4.2	8.58	0.32	0.5	0.223	1.2						
FC@LB	1	Fitch Creek at Lease Boundary	16/03/2016		3.32	51.8	7.19																													
FC@LB	1	Fitch Creek at Lease Boundary	30/03/2016		1.71	45	6.66	24		23		<5		2.6	200		2		17.3	<0.02	0.8	0.1	0.27	68	0.04	4.2	2.88	0.14	0.4	0.225	1.2						
FC@LB	1	Fitch Creek at Lease Boundary	12/04/2016		1.03	71.7	7.09																													
FC@LB	1	Fitch Creek at Lease Boundary	28/04/2016		3.36	77.9	6.61	29.4		28		<5		3.5	8500		3		8.4	<0.02	1.1	0.55	1.71	272	0.06	6.4	35.3	0.92	0.5	0.278	0.9						
FC@LB	1	Fitch Creek at Lease Boundary	13/05/2016		2.25	132.8	6.9																													
FC@LB	1	Fitch Creek at Lease Boundary	24/05/2016		2.92	91	7.58	50		36		<5		4.2	8200		4		11	<0.02	1.4	0.2	1.41	200	0.05	8.9	11.6	0.55	0.8	0.337	0.7						
FC@LB	1	Fitch Creek at Lease Boundary	30/01/2017	21.6		32.8	7.23				1.3		7.3	2.4	200		3		58	<0.02	0.6	0.13	0.27	86	0.07	2.3	5.07	0.16	0.4	0.277	2.6						
FC@LB	1	Fitch Creek at Lease Boundary	14/03/2017		3.66	35.92	7.63																													
FC@LB	1	Fitch Creek at Lease Boundary	6/04/2017			45.53	6.29		17		1.7		7.3	2.5	200			13.9	51.5	<0.02	0.7	0.11	0.28	70	0.06	2.9 - 3	3.43	0.16	0.7	0.194	2.5						
FC@LB	1	Fitch Creek at Lease Boundary	11/04/2017			54.85	7.22																													
FC@LB	1	Fitch Creek at Lease Boundary	24/04/2017	28.8		60.43	6.38		37		1.4		8	2.8	400			22	27.3	<0.02	1	0.17	0.23	108	0.04	4.8	7.47	0.2	0.5	0.203	2.5						
FC@LB	1	Fitch Creek at Lease Boundary	19/01/2018			59.82	7.11																													
FC@LB	1	Fitch Creek at Lease Boundary	14/02/2018			20.64	6.34																													
FC@LB	1	Fitch Creek at Lease Boundary	1/03/2018	20.2		43.91	6.55		16		1.3		7.4	2.2	100		2.2	13	34.8	<0.02	0.7	0.09	0.29	80	0.05	2.7	3.85	0.14	0.6	0.22	1.6						
FC@LB	1	Fitch Creek at Lease Boundary	14/03/2018			48.47	6.66																													
FC@LB	1	Fitch Creek at Lease Boundary	11/04/2018			95.23	6.9																													
FC@LB	1	Fitch Creek at Lease Boundary	23/04/2018			76.3	7.69																													
FC@LB	1	Fitch Creek at Lease Boundary	29/01/2019			62.64	6.97		23		2.2		7.4	2.8	300	50	3	20.2	196	<0.02	1	0.09	0.58	98	0.15	4.3	2.7	0.28	1.1	0.76	1.2						
FC@LB	1	Fitch Creek at Lease Boundary	4/02/2019			39.34	6.34		12		2		7.3	2.4	300	30	3	11.2	201	<0.02	0.7	0.12	0.48	114	0.17	2.3	8.5	0.26	0.9	0.477	3.9						
FC@LB	1	Fitch Creek at Lease Boundary	27/02/2019			38.3	7.2				1.1		7.1	2.5	400			13	41.7	<0.02	0.6	0.16	0.32	72	0.06	2.8	5.46	0.27	0.5	0.249	2.2						
FC@LB	1	Fitch Creek at Lease Boundary	20/03/2019			97.18	6.65		40		2		7.8	3.5	300	50	4	38.7	25.3	<0.02	1.6	0.12	0.38	102	0.06	8.4	5.41	0.29	0.6	0.289	1						
FC@LB	1	Fitch Creek at Lease Boundary	9/04/2019			75.85	6.98		21		<2		7.2	2.8	200	30	2	14.8	61.8	0.02	0.7	0.13	0.75	92	0.26	3.1	4.63	0.5	0.6	0.253	14.1						
FC@LB	1	Fitch Creek at Lease Boundary	9/05/2019			54.49	6.85		25		2		7.6	3.3	400	40	3	20.8	36.6	<0.02	0.9	0.15	0.27	66	0.05	4.5	5.35	0.19	0.6	0.215	2.5						
No. of samples				3.0	44.0	63.0	63.0	25.0	8.0	26.0	10.0	25.0	10.0	35.0	36.0	5.0	30.0	9.0	36.0	36.0	36.0	36.0	35.0	36.0	36.0	36.0	36.0	35.0	36.0	36.0						
Minimum				20.2	1.0	19.2	5.9	8.6	12.0	4.0	1.1	1.2	7.1	1.4	100.0	30.0	2.0	11.2	2.5	0.0	0.1	0.1	0.1	60.0	0.0	0.6	2.1	0.1	0.2	0.2	0.5						
Maximum				28.8	34.5	179.8	8.3	84.0	40.0	536.4	2.2	1.2	8.0	4.4	8500.0	50.0	7.0	38.7	201.0	0.0	2.5	0.7	1.9	380.0	0.3	15.8	35.3	1.1	1.4	0.8	14.1						
Mean				23.5	5.7	69.2	7.0	33.1	23.9	50.6	1.7	1.2	7.4	2.8	1037.1	40.0	3.1	18.6	44.3	0.0	1.0	0.2	0.6	104.6	0.1	5.5	7.9	0.3	0.6	0.3	2.2						
Standard Deviation				4.6	6.5	35.1	0.6	22.3	9.9	100.9	0.4		0.3	0.6	2049.0	10.0	1.1	8.5	44.8		0.5	0.1	0.5	65.6	0.1	3.7	7.1	0.2	0.2	0.1	2.5						
80th Percentile				25.9	7.2	99.1	7.5	50.4	32.2	56.0	2.0	1.2	7.6	3.3	600.0	50.0	4.0	21.3	56.6	0.0	1.6	0.2	0.9	108.0	0.1	8.7	8.5	0.5	0.7	0.4	3.0						
EB@GS200	2	East Branch Finniss River at GS8150200	30/10/2008			1834	6.89			18.285		10		16.6	969,000				50	7.4	91.6	2820	485	<200	1.5	187	5490	2330	3	30.7	4550						
EB@GS200	2	East Branch Finniss River at GS8150200	15/04/2009			938	6.56			170.66					408,000				27	2.2	32.2	880	297	<200	0.2	80.4	1810	736		8.86	1250						
EB@GS200	2	East Branch Finniss River at GS8150200	6/08/2010			570	8					10	6.34	7.6	209,000				4	<0.2	26	3.5	16.7	<200	<0.1	51.3	60.6	14.3	2.3	4.34	17						
EB@GS200	2	East Branch Finniss River at GS8150200	21/05/2012			670	7.13	77		93.94		<5	7.13	28	342,000				25.6	1.68	32.5	660	141	52	0.49	72.7	1250	574	0.8	5.96	948						
EB@GS200	2	East Branch Finniss River at GS8150200	31/01/2013			263.6	7.18	17		20.74		<5		4.4	86,400		5		38.7	0.2	7.9	118	48.3	80	0.05	19.3	519	91.4	1.1	3.73	71.3						
EB@GS200	2	East Branch Finniss River at GS8150200	27/02/2013		8.59	148.3	5.88	17		20.74		<5		3.5	47,700		3		45.9	0.16	4.2	43.1	32.4	98	0.12	12.2	134	39.7	0.5	2.84	49.3						
EB@GS200	2	East Branch Finniss River at GS8150200	27/03/2013		12.4	123.4	6.3	21.6		21		<5		6.4	30,200		4		36.8	0.08	3.2	20.5	22.7	70	0.11	7.4	69.2	20.3	0.9	1.76	19.6						
EB@GS200	2	East Branch Finniss River at GS8150200	24/04/2013		3.29	237.6	7.05	24		29.28		<5		3.7	83,100		3		40	0.32	7.7	121	38.4	22	0.04	19.6	304	105	0.5	3.86	159						
EB@GS200	2	East Branch Finniss River at GS8150200	23/05/2013		5.28	453.1	7.08	32		39.04		<5		4.6	167,000		3		51.5	0.72	15.1	294	63.9	6	<0.01	38.4	742	249	1	6.15	368						
EB@GS200	2	East Branch Finniss River at GS8150200	18/06/2013		4.29	342.6	6.96	31.6		32		<5		4.3	135,000		2		28.4	0.8	12.8	307	56.9	12	<0.01	31.6	585	262	0.5	3.29	443						
EB@GS200	2	East Branch Finniss River at GS8150200	16/07/2013		1.63	1428	6.97	48.4		48		<5		8.2	850,000		1		20.2	6.78	76	2370	535	4	0.11	171	4080	2070	1	18.9	3930						
EB@GS200	2	East Branch Finniss River at GS8150200	19/08/2013		1.4	1882	6.78	65.8		67		<5		9.5	1,030,000		3		42.9	8.6	96.3	3090	651	4	1.23	216	4590	2990	1.1	28.4	4960						
EB@GS200	2	East Branch Finniss River at GS8150200	9/09/2013		3.32	2285	6.58	37.4		38		5		9.7	1,410,000		2		30.9	11.6	118	3880	513	<10	0.26	274	5430	3830	1.7	15.4	7160						
EB@GS200	2	East Branch Finniss River at GS8150200	7/10/2013		2.84	2585	5.75	16.4		13		5		10	1,790,000		2		23.7	14	143	5980	555	10	0.24	352	8470	4970	1.9	6.42	10,800						
EB@GS200	2	East Branch Finniss River at GS8150200	5/11/2013		4.53	2032	5.48	3.4		6		5		8.7	1,290,000				44.7	12.6	108	4120	606	10	1.52	255	7070	3810	2	6.85	8920						
EB@GS200	2	East Branch Finniss River at GS8150200	4/12/2013		16.7	672	7	34		27		<5		4.1	264,000		5		48.5	1.12	23.1	400	132	16	0.05	57.8	1100	314	2	11.4	397						
EB@GS200	2	East Branch Finniss River at GS8150200	8/01/2014		7.63	333.6	7.08	4.5		21		<5		4.2	139,000		3		35.1	0.54	11.9	188	70.6	12	<0.01	30.6	584	161	0.6	5.02	240						
EB@GS200	2	East Branch Finniss River at GS8150200	5/02/2014		11.47	144.3	6.81	9.8		9		<5		2.6	50,300		3		33.2	0.18	5.9	50.3	65.6	38	0.42	10.5	203	46.2	0.6	3.56	50.7						
EB@GS200	2	East Branch Finniss River at GS8150200	5/03/2014		4.33	226.2	8.2	16.8		16		<5		3.4	73,500		3		67.6	0.3	7	86.8	69.6	100	0.3	17	231	74	0.6	4.38	100						
EB@GS200	2	East Branch Finniss River at GS8150200	2/04/2014		5.4	388.8	7.62	29.8		36.35		<5		4.4	160,000		2		36.9	0.8	15.1	249	61.1	12	0.02	36.7	695	219	0.7	5.97	334						

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190									594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985									1,192,000					236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985									997,000					150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472									761,000					117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7									594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7									594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@GS200	2	East Branch Finniss River at GS8150200	29/04/2014		5.84	1133	7.43	41.4		41		<5		6.3	545,000		2		61.7	3.06	46.3	900	208	10	0.01	116	2090	746	1.2	9.07	1340
EB@GS200	2	East Branch Finniss River at GS8150200	25/05/2014		7.12	1121	6.26	42		43		<5		8.4	590,000		2		25.3	3.9	52.1	1420	222	10	0.13	125	2710	1180	1.6	11	2460
EB@GS200	2	East Branch Finniss River at GS8150200	28/05/2014		2.59	1224	6.87	47.2		57.58		<5		8.7	604,000				20.3	4.82	58	1650	317	<2	0.02	129	2850	1520	1.2	14.9	2920
EB@GS200	2	East Branch Finniss River at GS8150200	24/06/2014		2.29	1487	6.41	88		85		15		10.6	899,000		2		41.8	8.14	86.2	2990	723	2	0.63	191	4480	2880	1.1	30.4	5740
EB@GS200	2	East Branch Finniss River at GS8150200	23/07/2014		2.31	1325	6.95	116		111		<5		12	821,000		2		52	8.46	85.8	2930	629	<2	0.68	178	4290	2770	0.8	25.8	6060
EB@GS200	2	East Branch Finniss River at GS8150200	19/08/2014		1.96	1772	6.84	88		102		<5		11.9	979,000		2		54.1	10.6	97.7	3690	791	4	0.25	210	5440	3360	0.9	24.7	7530
EB@GS200	2	East Branch Finniss River at GS8150200	17/09/2014		4.14	2304	6.42	43		65		<5		11.4	1,470,000		2		143	17.6	126	6040	1850	<10	1.26	307	9590	5580	1.3	32.4	12,500
EB@GS200	2	East Branch Finniss River at GS8150200	7/01/2015		9.75	252.7	6.73	20.4		23		<5		6.6	86,300				81.5	0.22	8.9	67.7	61.9	52	0.73	19.1	316	60.1	1.1	3.66	72.1
EB@GS200	2	East Branch Finniss River at GS8150200	4/02/2015		3.43	172.9	6.06	11		16		<5		3.3	48,300		3		53	0.14	4.7	59	40.5	72	0.11	11.9	204	51.5	0.7	2.94	70.4
EB@GS200	2	East Branch Finniss River at GS8150200	5/03/2015		7.65	132.4	6.12	17		14		<5		3	34,800		4		80.5	0.1	3.9	37.5	41.1	70	0.11	9	157	35.4	0.6	2.33	39.8
EB@GS200	2	East Branch Finniss River at GS8150200	31/03/2015		3.43	185	7.12	23		22		<5		3.8	55,900		3		107	0.18	5.8	66.4	40.4	40	0.08	14.3	220	61.5	0.4	3.26	78.7
EB@GS200	2	East Branch Finniss River at GS8150200	28/04/2015		1.92	962	7.03	40		31		<5		6	415,000		2		19.3	2.6	36	958	147	4	0.01	89	2460	790	0.9	5.36	1480
EB@GS200	2	East Branch Finniss River at GS8150200	26/05/2015		9.3	2005	6.11	26.4		24		<5		7.7	1,070,000		2		40.5	8.14	92.1	3260	654	28	0.25	215	5880	2900	1.2	14.6	5210
EB@GS200	2	East Branch Finniss River at GS8150200	1/07/2015		1.24	1949.7	6.77	78		61		2.9		10.7	1,020,000		2		36.5	7.9	90	3030	558	<2	0.29	209	4290	2960	1	23	5600
EB@GS200	2	East Branch Finniss River at GS8150200	23/07/2015		2.31	2076	6.58	80		79		<5		12.6	1,020,000		2		40.7	8.52	94.3	3100	401	6	0.12	215	4030	3240	1	17.4	6290
EB@GS200	2	East Branch Finniss River at GS8150200	18/08/2015		2.08	2034.6	7			24		<5		11.4	1,640,000		1		48.3	12.2	132	4710	638	18	0.21	328	6600	4880	1.1	8.56	10,100
EB@GS200	2	East Branch Finniss River at GS8150200	10/12/2015		7.1	1415.5	6.61	23.4		17		10		14.5	641,000		7		46.7	4.88	71.5	1500	357	6	0.31	114	3470	1240	2.8	8.2	2730
EB@GS200	2	East Branch Finniss River at GS8150200	6/01/2016		4.88	156.1	7.03	12.6		11		<5		3	54,900		4		47.1	0.2	5.5	68.9	69.5	40	0.07	12.3	285	56.5	1.2	3.35	70.8
EB@GS200	2	East Branch Finniss River at GS8150200	4/02/2016		3.68	185.1	6.59	18.2		12		1.4		3.1	50,500		3		43.5	0.16	5.2	54.4	63.5	50	0.09	12	220	49.7	0.7	3.19	60.2
EB@GS200	2	East Branch Finniss River at GS8150200	3/03/2016		3.29	264.5	6.83	24.2		21		<5		3.4	79,700		2		59	0.34	7.8	114	63.5	94	0.15	18.7	387	100	0.5	3.99	147
EB@GS200	2	East Branch Finniss River at GS8150200	30/03/2016		2.34	184	7.19	35.2		20		<5		3.5	62,900		3		45.2	0.2	6.4	70.2	48.6	50	0.08	15.7	249	66.5	0.6	3.15	87.9
EB@GS200	2	East Branch Finniss River at GS8150200	27/04/2016		2.96	954.9	671	180		44		<5		7.4	444,000		3		26.2	2.36	41	1020	159	6	0.03	91.2	2650	830	1	7.04	1500
EB@GS200	2	East Branch Finniss River at GS8150200	24/05/2016		2.84	1083.7	6.71	46		47		<5		8.4	531,000		3		20.6	3.6	50.4	1570	202	8	0.02	112	2990	1260	1.1	10.3	2430
EB@GS200	2	East Branch Finniss River at GS8150200	21/06/2016		1.88	1898.2	6.86			36		<5		7.9	1,100,000		2		71.5	7.88	91.5	2820	792	26	0.6	222	4910	2760	1.5	15.6	5550
EB@GS200	2	East Branch Finniss River at GS8150200	20/07/2016		1.6	1849.1	6.78	29.8		29		5		10	920,000		3		70.1	7.58	80.6	3110	1280	14	1.63	186	5940	2780	2.2	18.5	5850
EB@GS200	2	East Branch Finniss River at GS8150200	18/08/2016		1.89	2334.8	5.34	7.4		2		<5		7	1,370,000				621	10.8	112	4700	1540	136	4.88	267	7430	4380	1.7	28.5	8510
EB@GS200	2	East Branch Finniss River at GS8150200	31/01/2017	15.2		194.4	7.21							6.3	50,300		3		80.4	0.08	5.6	34.8	52.9	58	0.17	11.5	134	33	0.6	2.35	33.4
EB@GS200	2	East Branch Finniss River at GS8150200	27/02/2017		3.38	172.8	6.94				1.3		7.1	3	55,100			66.1	77.8	0.22	5.5	66.2	63.6	20	0.04	12.7	219	61.2	0.5	3.42	80
EB@GS200	2	East Branch Finniss River at GS8150200	6/04/2017			143.58	7.42		14		1.4		7.3	3.1	37,400			49.4	98.4	0.14	4.1	43.9	48.9	36	0.11	9.5	134	39.9	0.5	2.9	50.9
EB@GS200	2	East Branch Finniss River at GS8150200	27/04/2017	21		289.84	7.22		22		1.5		7.4	4	92,400			107	75.2	0.42	8.6	130	50.8	14	0.04	20.8	367	119	0.6	4.51	188
EB@GS200	2	East Branch Finniss River at GS8150200	31/05/2017			1361.3	5.34		22		3.4		6.7	8.6	820,000		1.7	852	50.1	5.7	67.8	2090	657	70	0.11	166	4750	1890	1.5	17.3	4210
EB@GS200	2	East Branch Finniss River at GS8150200	21/06/2017			2196.2	6.01		3		3.9		5.7	8.5	1,310,000		1.4	1320	1340	13.6	104	4610	2260	310	7.24	258	8510	3870	1.6	60.8	9490
EB@GS200	2	East Branch Finniss River at GS8150200	17/07/2017	2.8		2802.1	4.77		<1		3.8		4.9	7.8	1,680,000		1.3	1660	6000	17.8	123	6270	3250	400	16	328	11,200	5840	2.1	114	14,700
EB@GS200	2	East Branch Finniss River at GS8150200	16/08/2017	124		3377.2	4.27		<1		4.5		4.5	5.9	2,230,000		1.4	2180	11,500	27.6	154	9620	5380	142	25	437	16,800	8910	1.9	225	24,200
EB@GS200	2	East Branch Finniss River at GS8150200	13/09/2017			3620.4	4.22		<1		3.4		4.7	5.6	2,330,000		2.1	2290	9240	34.6	156	11,000	6770	154	25	461	19,400	9860	2.2	361	28,300
EB@GS200	2	East Branch Finniss River at GS8150200	12/10/2017			4680.3	4.19		<1		4.6		4.8	6.9	3,480,000		2.2	3380	14,400	43.4	229	16,500	10,200	306	48.2	683	32,200	14,100	2.6	572	39,200
EB@GS200	2	East Branch Finniss River at GS8150200	9/11/2017			1982.5	4.17		<1		4.5		4.5	4.2	1,120,000			1090	4240	13	80.7	4300	3240	124	19.9	217	9420	3690	3.2	108	9810
EB@GS200	2	East Branch Finniss River at GS8150200	7/12/2017			1792.9	4.32		<1		4.5		4.6	8.5	1,060,000			1050	3200	8.9	98.8	3410	2040	114	22.7	194	8520	2800	3	61.6	6310
EB@GS200	2	East Branch Finniss River at GS8150200	4/01/2018			2027.9	4.24		<1		4.2		4.7	13.1	1,320,000			1320	4520	10.2	150	3730	2190	194	69.6	229	8620	3130	2.6	74.7	6820
EB@GS200	2	East Branch Finniss River at GS8150200	1/03/2018	16.2		157.74	6.6		13		1.5		7.3	2.7	45,900		2	57.2	53	0.14	5	55.2	55.6	30	0.07	10.9	193	49.6	0.6	3.64	55.3
EB@GS200	2	East Branch Finniss River at GS8150200	2/01/2019			715.98	6.86		24		6		7.2	10.2	361,000	590	3	391	101	2.28	40.5	776	242	2	0.24	70.4	2070	666	1.5	10.3	1450
EB@GS200	2	East Branch Finniss River at GS8150200	6/02/2019			189.98	6.34		15		2.1		7.5	3.6	60,800	140	2	76.6	89	0.1	7.4	43.5	42.5	54	0.13	14.1	164	38.3	0.9	2.94	44.8
EB@GS200	2	East Branch Finniss River at GS8150200	21/03/2019			356.18	6.27		23		2		7.5	4.8	130,000	230	3	154	58.3	0.3	15.3	110	64.1	22	0.08	28.2	425	105	1	4.73	139
EB@GS200	2	East Branch Finniss River at GS8150200	10/04/2019			159.9	6.91		19		<2		7.2	3.5	64,500	130	2	80.1	66.2	0.16	6.6	50.7	43.4	40	0.08	15.5	188	50.6	0.8	2.98	66
EB@GS200	2	East Branch Finniss River at GS8150200	10/05/2019			288.68	6.4		23		2		7.5	4.6	95,000	180	3	117	65.3	0.34	9.5	126	48.7	10	0.04	22.7	315	112	0.9	4.27	184
EB@GS200	2	East Branch Finniss River at GS8150200	24/07/2019			2353.8	6.37																													
No. of samples				5.0	42.0	66.0	66.0	41.0	17.0	45.0	18.0	45.0	20.0	64.0	65.0	5.0	51.0	18.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.0	65.0	65.0
Minimum				2.8	1.2	123.4	4.2	3.4	3.0	2.0	1.3	1.4	4.5	2.6	30200.0	130.0	1.0	49.4	4.0	0.1	3.2	3.5	16.7	2.0	0.0	7.4	60.6	14.3	0.4	1.8	17.0
Maximum				124.0	16.7	4680.3	671.0	180.0	24.0	170.7	6.0	15.0	7.5	28.0	3480000.0	590.0	7.0	3380.0	14400.0	43.4	229.0	16500.0	10200.0	400.0	69.6	683.0	32200.0	14100.0	3.2	572.0	39200.0
Mean				35.8	4.7	1180.2	16.5	39.6	17.8	39.2	3.2	6.9	6.2	7.2	652752.3	254.0	2.6	902.2	891.4	6.0	55.4	2132.1	816.3	59.5	4.2	131.5	3864.4	1920.1	1.3	33.0	4377.3
Standard Deviation				49.7	3.4	1020.0	81.8	34.3	6.6	32.8	1.4	4.2	1.2	4.2	695678.1	191.9	1.1	977.7	2682.0	8.3	52.4	2967.9	1698.0	80.3	12.0	136.1	5383.5	2643.0	0.7	87.1	7018.0
80th Percentile				41.6	7.1	2028.7	7.1	48.4	23.0	58.3	4.5	10.0	7.3	10.0	1104000.0	302.0	3.0	1524.0	90.9	10.4	97.9	3698.0	736.6	91.2	1.3	218.0	6072.0	3264.0	1.9	26.3	6888.0
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	6/08/2010			1140	6.6					15	6.19	10.6	458,000				3	<0.2	50.1	22.7	13.1	<200	<0.1	94.8	160	45.9	1.1	1.73	45
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	30/01/2012			226	6.94					<5		4.3	79,800				34	0.2	8.3	72.1	44.1	40	0.3	16.3	271	70.8	0.7	2.28	85
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	26/05/2014		1.69	1225	7.21	62.2		60		10		10.3	634,000		4		1.4	0.74	68	52.8	9.54	4	0.02	135	196	269	1.1	8.83	248
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	19/07/2018			148.64	6.76				9.9			10.9	507,000	820	5.3	608	66.4	0.06	61.5	8.09	10.5	4	0.01	110	115	24.5	1.3	15.8	29.7
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	14/08/2018		2.4	1342.5	7.09		100		9.9		7.8	11.9	540,000	880	7	666	30.9	0.04	68.1	3.69	11.2	2	0.03	120	62.2	17.5	0.9	21.5	22.2
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	2/01/2019			878.84	7.36		41		8		7.5	8.2	460,000	740	3	530	46.8	0.18	51	21.1	13.9	4	0.03	97.8	257	90.8	2.4	1.36	97
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	6/02/2019			195.14	6.42		16		2.3		7.5	3.8	61,900	120	2	78.2	69.8	0.1	7.7	38.2	34.8	64	0.17	14.3	172	38.3	1	2.55	45.9
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	20/03/2019			426.13	6.13		25		2		7.6	5.2	164,000	300	3	194	48.5	0.24	20.2	59.6	25.6	12	0.05	34.9	299	76.8	1.2	2.43	95.7
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	9/04/2019			194.62	6.94		22		2		7.1	3.6	60,100	110	2	78.3	52	0.12	7.1	30.3	22.1	22	0.04	14.7	155	39	0.8	2.24	46.2
EBdsRB	2	East Branch Finniss River downstream Historic Rail Bridge	9/05/2019			281.73	6.78		26		2		7.5	4.7	96,400	190	4	123	42.9	0.14	11.6	38.9	12.6	6	0.03	22.9	251	55.7	0.9	2.46	68
No. of samples				0.0	2.0	10.0	10.0	1.0	6.0	1.0	7.0	3.0	7.0	10.0	10.0	7.0	8.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum				0.0	1.7	148.6	6.1	62.2	16.0	60.0	2.0	10.0	6.2	3.6	60100.0	110.0	2.0	78.2	1.4	0.0	7.1	3.7	9.5	2.0	0.0	14.3	62.2	17.5	0.7	1.4	22.2
Maximum				0.0	2.4	1342.5	7.4	62.2	100.0	60.0	9.9	15.0	7.8	11.9	634000.0	880.0	7.0	666.0	69.8	0.7	68.1	72.1	44.1	64.0	0.3	135.0	299.0	269.0	2.4	21.5	248.0
Mean					2.0	605.9	6.8	62.2	38.3	60.0	5.2	12.5	7.3	7.4	306120.0	451.4	3.8	325.4	39.6	0.2	35.4	34.7	19.7	17.6	0.1	66.1	193.8	72.8	1.1	6.1	78.3
Standard Deviation					0.5	484.7	0.4		31.3		3.9	3.5	0.5	3.3	232109.9	346.5	1.7	264.0	23.2	0.2	26.6	22.1	11.8	21.3	0.1	49.5	75.2	72.7	0.5	7.1	65.2
80th Percentile					2.3	1157.0	7.1	62.2	41.0	60.0	9.5	14.0	7.6	10.7	513600.0	804.0	4.8	592.4	54.9	0.2	62.8	54.2	27.4	29.2	0.1	112.0	259.8	79.6	1.2	10.2	96.0
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	31/01/2013			265.9	7.04	19.4		23.66		<5		4.1	82,300		4		16.3	0.1	8.3	16.6	28.9	38	0.06	19.5	87.5	39.6	1	1.97	34.8
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	26/02/2013		11	192	5.94	21		25.62		<5		4	55,800		4		22.8	0.12	5.9	24.2	21.4	58	0.08	13.6	138	33.3	0.6	1.87	31.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	26/03/2013		3.36	201.5	6.08	24.6		24		<5		4	56,800		4		22.6	0.12	6.3	20.2	16.5	52	0.05	13.8	82.9	34	0.5	1.68	31.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	23/04/2013		2.13	213.6	7.27	25		30.5		<5		3.9	76,800		2		19.1	0.16	9.2	45.6	17.4	18	0.04	18	176	57.2	0.5	2	62.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	22/05/2013		4.85	368.8	6.33	28		34.16		<5		4.8	127,000		3		29.7	0.16	13.5	24.5	18.7	10	<0.01	28.7	296	58.3	1.6	1.89	53.5
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	17/06/2013		1.89	296.7	6.66	33.6		34		<5		4.7	115,000		2		18.3	0.12	13.2	18.5	10.7	12	<0.01	27.4	99.6	52	0.6	2.49	47.2
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	15/07/2013		2.44	407.5	7.08	50		53		<5		6	167,000		3		1.2	<0.02	19.9	86.8	1.53	92	<0.01	39.5	1310	37.7	1.3	1.83	12.5
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	3/12/2013		11.33	638	6.95	19		20		<5		4.6	291,000		4		8.6	0.56	30.8	121	15.9	6	0.04	59.2	262	211	1.6	0.809	281

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190											594,000				117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985											1,192,000				236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985											997,000				150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472											761,000				117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7											594,000				117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7											594,000				117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	7/01/2014		4.75	324.9	6.03	21.7		24		<5		4.4	119,000		3		10.4	0.14	12.2	24.7	14.6	12	<0.01	26.4	191	47	0.6	1.83	47.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	4/02/2014		10.33	74.5	6.92	12.8		8		<5		2.4	20,500		3		103	0.04	3.1	19.4	37.4	102	1.35	4.7	116	19.7	0.6	1.77	25.5
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	4/03/2014		2.75	241.4	8.26	27.2		26		<5		3.6	68,300		3		32.1	0.22	9.3	69.1	37.2	12	0.07	16.3	222	63.9	0.5	3.06	76.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	1/04/2014		3.69	416.3	7.9	42.8		52.21		<5		4.5	140,000		2		18	0.32	18.1	91.6	18.2	8	<0.01	33.5	385	97.3	0.7	4.62	105
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	28/04/2014		2.53	640	7.92	61.6		56		<5		5.9	230,000		2		5.7	0.2	27.9	11.9	9.09	<2	<0.01	54.1	160	52.9	0.9	5.95	35.3
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	26/05/2014		1.48	845	6.65	28.2		34.4		5		8.3	387,000		3		7.9	0.1	44	8.43	10.4	6	0.02	86.6	130	29.4	1.3	6.73	25.6
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	23/06/2014		2.07	751	6.52																										
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	18/08/2014		2.71	1407	6.56	846		83		10		16.4	850,000		3		1.6	0.14	96.9	6.7	9.82	<2	0.02	178	47	63.3	1.2	19.8	57.7
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	6/01/2015		14.79	190.5	6.52	13.85		13		<5		4.6	70,600				63.3	0.12	8	42.1	32	64	0.49	14.8	273	44.2	1.2	1.79	52.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	3/02/2015		2.94	143.2	69.89	21.6		32		<5		3.5	48,800		3		37	0.12	5.8	33.4	22.9	54	0.07	11.6	157	40	0.7	1.86	41.5
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	4/03/2015		2.94	162.6	7.06	20.8		17		<5		3.3	40,800		4		71.1	0.08	5.7	28.8	29.2	66	0.09	10	156	31.9	0.6	1.71	33.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	1/04/2015		3.21	203.5	7.15	27.8		29		<5		3.8	52,700		3		61.9	0.1	8	31.4	11.9	24	0.04	14	190	37.4	0.3	1.61	39.8
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	29/04/2015		3.85	428.2	7.07	52		53		<5		5.2	117,000		3		10.7	0.06	17.6	1.08	8.39	10	0.01	30	38.8	21.7	0.7	2.66	14.7
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	5/01/2016		4.24	177.5	7.39	12.6		12		<5		3.2	58,000		4		29.1	0.16	6.5	57.9	37.7	32	0.04	12.1	268	50.2	1.1	1.99	52.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	3/02/2016		2.98	147.5	6.96	18.6		14		1.8		3.2	46,000		3		21.7	0.1	5.9	34	30.4	46	0.07	11.1	163	36.5	0.7	1.77	38.6
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	1/03/2016		2.26	222.5	7.25	34		24		<5		3.4	66,000		2		23.4	0.14	8.6	40.6	16.2	18	0.03	15.7	197	47.7	0.6	1.83	50.1
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	29/03/2016		2.31	202.6	5.35	29.8		23		<5		3.4	55,600		3		24.1	0.1	7.4	25.4	16.8	26	0.04	14	129	34	0.6	1.95	32.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	26/04/2016		2.61	452	7.34	40		43		<5		5.2	166,000		4		4.7	0.06	20.7	3.68	8.31	8	<0.01	38	94.7	27.4	0.8	2.29	17.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	23/05/2016		5.17	345	7.22	42		46		<5		5.4	120,000		4		12.8	0.04	16.2	1.63	9.27	8	0.06	30.5	239	22.6	1.7	1.65	10.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	31/01/2017	18.2		156.9	6.89							3.1	40,100		4		49.3	0.1	5.2	27.3	38.7	94	0.12	9.4	147	33.9	0.6	1.83	33.2
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	1/03/2017		4.18	221.7	7.38				1.9		7.3	3.4	62,200			83.6	67.8	0.16	8.7	54.7	36.5	24	0.04	15	213	56.8	0.6	2.72	60.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	5/04/2017			173.15	6.2		22		1.7		7.2	3.3	44,400			62	44	0.12	6.3	41.7	31.4	34	0.09	11.1 - 11.2	143	44.5	0.5	2.05	55.9
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	26/04/2017			270.33	7.47		30		2.3		7.6	4.1	82,400			106	48.4	0.2	10.6	54.9	17	12	0.06	19.3	248	63.9	0.6	2.89	84.2
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	30/05/2017			662.53	7.03		65		5.2		7.6	6.4	242,000		2.7	306			31.2					55.4			1.2		
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	20/06/2017			730.03	7.47		68		6.6		7.5	6.8	245,000		2.9	321	3.9	0.06	32.3	7.57	10.1	6	<0.01	58.2	178	19.4	1.4	6.21	19.4
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	2/03/2018	24.6		200.87	6.99		23		1.8		7.6	3	53,100		2	73.4	44.8	0.12	7.7	45.7	39.2	28	0.05	13.2	184	46.9	0.6	3.01	47.8
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	27/04/2018	42		249.32	7.34		41		2.5		7.4	3.9	95,200		2.4	134	63.9	0.12	12.9	21.9	15.1	24	0.02	24.7	128	46.7	0.7	3.6	49.1
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	19/07/2018			91.79	6.88																										
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	14/08/2018		4.94	689.27	6.72		84		7.8		7.7	7.9	233,000	400	8	325	18.6	<0.02	32.8	3.09	9.66	4	0.02	59	104	11.7	2.4	7.23	8.7
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	6/02/2019			193.03	5.61																										
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	19/03/2019			483.08	6.4		17		2		7.3	4.2	192,000	310	3	222	25.1	0.32	20.3	33.8	10.9	6	0.04	41.6	235	113	1.2	1.07	167
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	9/04/2019			200.5	6.85		21		<2		7.1	3.6	57,000	110	2	74.5	47.5	0.1	6.7	18.5	18.7	34	0.05	14	125	32.7	0.9	1.92	35.8
EB@GS097	3	East Branch Finniss River Gauge Station 5km downstream Rum Jungle	9/05/2019			271.97	6.55		27		2		7.5	4.7	92,000	180	5	119	40.4	0.08	12.3	11.9	11.2	8	0.03	21.4	186	30.7	1	1.71	32.8
No. of samples				3.0	29.0	46.0	46.0	26.0	15.0	26.0	17.0	26.0	17.0	44.0	44.0	9.0	39.0	17.0	43.0	43.0	44.0	43.0	43.0	43.0	43.0	44.0	43.0	43.0	44.0	43.0	43.0
Minimum				18.2	1.4	74.5	5.4	12.6	16.0	8.0	1.6	1.8	7.1	2.4	20500.0	110.0	2.0	62.0	1.2	0.0	3.1	1.1	1.5	4.0	0.0	4.7	38.8	11.7	0.3	0.8	8.7
Maximum				42.0	14.8	3232.0	69.9	846.0	90.0	83.0	10.0	10.0	7.9	16.4	850000.0	1020.0	8.0	805.0	103.0	0.8	96.9	321.0	49.7	102.0	1.4	178.0	1750.0	464.0	2.4	19.8	687.0
Mean				28.3	4.3	457.6	8.2	60.5	42.6	32.1	4.1	5.6	7.5	5.1	164577.3	472.2	3.3	256.4	34.5	0.2	19.6	41.6	19.9	27.9	0.1	37.6	256.8	60.2	0.9	3.6	70.1
Standard Deviation				12.3	3.3	519.7	9.3	160.7	26.9	17.0	3.0	4.1	0.2	2.7	183180.6	363.7	1.2	237.1	25.2	0.2	21.0	52.4	11.5	26.4	0.2	38.8	311.2	72.1	0.5	4.1	109.4
80th Percentile				35.0	4.9	644.5	7.3	42.0	70.6	46.0	7.8	8.0	7.6	5.9	231200.0	874.0	4.0	324.2	55.5	0.2	29.1	56.7	31.8	47.2	0.1	54.9	265.6	62.3	1.2	3.5	62.0
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	31/01/2013			293.8	7.18	23		28.06		<5		4.1	97,600		5		39.5	0.24	8.9	78.9	43.8	66	0.08	22.8	286	74.6	1	4.14	86
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	26/02/2013		10.55	161.6	5.87	20		24.4		<5		3.7	54,400		3		36	0.14	5.4	38.9	26.7	76	0.11	13.4	145	38.5	0.6	2.47	44.3
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	26/03/2013		4	177.4	5.99	24.4		23		<5		3.6	46,100		4		34.6	0.14	5.1	32.1	24.3	80	0.08	12.3	103	34.1	0.5	2.34	44.3
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	23/04/2013		2.79	226.9	7.24	25		30.5		<5		3.9	83,000		3		29.8	0.3	9.6	89.2	34.1	20	0.04	19.2	246	86.9	0.5	2.89	118
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	22/05/2013		6.6	436.9	6.28	30		36.6		<5		5.1	158,000		3		41.9	0.38	16.2	128	27.5	6	<0.01	35	517	132	1.3	4.02	155
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	17/06/2013		3.98	336.6	6.85	32.8		40.016		<5		5	136,000		2		26.6	0.36	15.2	130	19.4	20	<0.01	31.4	288	141	0.5	3.69	187
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	15/07/2013		1.56	629	7.22	42		56		<5		7.5	315,000		2		1.5	0.24	34.6	10.1	6	<2	<0.01	67.2	90	99.2	0.7	3.71	86.6
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	3/12/2013		15.47	604	6.86	16		13		<5		3.8	279,000		4		29.5	1	24.7	358	58.7	20	0.06	57.8	1120	298	2.3	3.69	357
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	7/01/2014		6.63	351.9	6.23	25		25		<5		4.5	131,000		3		22.3	0.3	13.1	87.8	29.7	12	0.01	28.9	403	93.3	0.7	3.43	118
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	4/02/2014		9.87	75.7	7.39	7.6		9		<5		2.4	20,500		3		103	0.04	3.2	18.4	35.7	100	0.33	4.9	111	19.6	0.6	1.78	16
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	4/03/2014		3.01	231.8	8.4	21.4		21		<5		3.6	73,800		2		37.5	0.28	8.6	86.9	68	14	0.07	16.5	242	77.8	0.5	3.36	97.4
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	1/04/2014		3.05	452	7.63	33.8		41.236		<5		4.5	164,000		3		23.7	0.56	18.5	181	36.5	8	<0.01	37.1	575	165	0.5	5.35	217
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	28/04/2014		4.32	752	7.5	50.67		48		<5		7	320,000		2		10.3	0.72	34.7	171	12.5	8	<0.01	70.2	625	215	0.9	6.29	261
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	27/05/2014		0.98	1187	6.58	36.6		44.652		5		8.3	623,000				1.9	1.44	60.7	204	16.6	2	0.02	130	520	453	1.4	2.99	632
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	23/06/2014		4.03	1083	6.99	38.6		58		10		11.4	626,000		3		0.6	0.34	67.3	7.56	8.33	<2	<0.01	132	95	132	1.1	9.45	132
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	22/07/2014		4.92	1162	7.52	72		78		10		14.8	786,000		2		0.9	0.22	89	2.01	9.45	<2	<0.01	164	31	105	1	15.7	93.1
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	16/09/2014		8.44		7.67	94		92		10		17.6	923,000		4		2.3	0.12	102	23.2	10.5	2	0.02	196	362	50.7	1.6	23.7	32.8
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	13/10/2014		7.55	1988	7.46	112		98		15		20.4	1,060,000		6		6.2	0.06	117	20.9	10.5	4	0.02	226	431	35.5	2.4	27.7	19.1
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	6/01/2015		11.79	217.6	6.7	16.94		15		<5		5.2	78,500				68.1	0.16	8.5	56.1	42.7	58	0.69	16.5	348	51.8	1.2	2.37	56.5
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	3/02/2015		9.07	152	6.9	20		17		<5		3.5	53,300		3		62.3	0.14	6	53.8	41.8	60	0.14	12.4	205	51.2	0.7	2.44	68.7
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	3/03/2015		4.2	147.9	7.16	15.4		14		<5		3.2	38,200		6		68.9	0.08	5.3	30.6	39.4	62	0.1	9.4	163	31.5	0.6	1.89	29.1
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	31/03/2015		3.69	214.4	6.59	26.2		25		<5		4	62,300		2		124	0.16	8.1	57.9	40.3	44	0.1	15	215	59.7	0.4	2.28	72.6
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	28/04/2015		4.23	602.4	6.46	44		45		<5		6.4	209,000		3		6.5	0.34	25.5	66.1	11.5	6	<0.01	46.4	415	113	0.6	3.09	117
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	27/05/2015		4.31	1021.5	7.46	54		60		10		10.9	471,000		3		12.6	0.14	55.4	12.2	9.57	4	<0.01	98.9	231	61.9	1.2	6.13	57.7
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	24/06/2015		2.5	1259.8	7.19	72		69		11.2		13.2	653,000		4		17.1	0.08	76.3	1.91	7.84	<2	<0.01	134	63.6	33.8	1.3	8.39	30.5
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	10/12/2015		38.83	1203.4	6.95	30		21		5		6.6	581,000		7		13.7	2.6	60.4	1090	96.3	8	0.19	111	4310	788	3.9	2.72	1340
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	5/02/2016		3.58	188.3	6.63	16.6		15		1.8		3.3	51,600		3		48.2	0.12	6.2	43.1	53.5	68	0.1	12.4	172	42.4	0.7	2.47	47.8
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	1/03/2016		2.79	224.8	7.49	34		23		<5		3.6	78,200		6		61.7	0.18	9.5	67.8	40.4	50	0.07	17.8	258	64.3	0.5	3.05	69.2
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	30/03/2016		2.4	199.7	6.65	24.4		22		<5		3.9	69,600		3		29.1	0.16	8.6	55.8	33.5	30	0.04	16.6	219	58.3	0.6	2.36	71.6
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	26/04/2016		3.44	505.4	7.33	152		43		<5		6	196,000		4		5.7	0.18	23.8	31.3	7.78	4	<0.01	42.9	287	70.5	0.7	2.86	69.1
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	24/05/2016		3.08	604.6	6.41	46.4		46		<5		7.1	249,000		3		7	0.12	29.4	1.88	10.3	4	<0.01	55.4	101	52.3	1.1	2.84	50.1
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	21/06/2016		4.46	1078.7	6.99	76		80		10		11.3	472,000		4		9.4	0.06	58.6	3.31	5.87	2	<0.01	102	151	24.1	2	11	20.8
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	20/07/2016		2.34	1439.6	7.18	68		80		10		12.3	642,000		4		13.5	0.06	78	16.6	6.56	12	0.01	134	533	54.2	2.1	11.9	34.6
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	30/01/2017	17.6		117.5	7.33				1.5		7.4	3.1	37,300		3		56.8	0.08	4.6	30.8	56.9	50	0.07	8.9	138	32.1		1.92	30.4
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	28/02/2019		3.81	204.7	6.9				1.6		7.4	3.3	68,600			83.4	94.9	0.16	8.1	63.8	49.7	30	0.06	15.4	236	60.7	0.5	3.42	60.7
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	6/04/2017			188.39	7.11		16		1.5		7.4	3.3	52,900			67.4	74.5	0.16	6.3 - 6.4	50.5	39.3	18	0.06	12.5	156	48.5	0.6	2.74	57.7
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	27/04/2017	27.4		303.71	7.25		26		2.1		7.4	4.2	95,900			115	63.9	0.34	11.1	104	37.9	8	0.03	21.2	341	102	0.5	3.52	148
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	30/05/2017			994.71	6.91		52		5.7		7.3	8.1	433,000		2.3	494	6.2	0.38	47.4	66.5	7.26	4	<0.01	91.1	808	161	1.4	3.94	194
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	21/06/2017			1228.1	6.07		69		9.5		7.5	11.5	593,000		2.6	680	6.1	0.1	67.3	36.1	5.06	14	<0.01	124	595	75.9	1.7	8.34	64.7

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190											594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985											1,192,000					236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985											997,000					150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472											761,000					117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7											594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7											594,000					117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	18/07/2017	50		1080.1	7.5		76		10.5		7.6	13.1	754,000		2.9	864	5.9	0.04	85.9	15.4	5.87	8	0.01	158	387	43.8	1.8	10.6	34.9
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	7/12/2017	33.6		1045	6.27		31		5.3		7.1	6.3	529,000			571	37.4	0.12	57.5	60.5	5.07	26	0.07	104	2060	193	3.7	0.662	184
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	18/07/2018			161.1	7.12				8.8			10.5	579,000	910	4.1	664	16.7	0.1	65.6	4.25	8.61	4	<0.01	121	95.8	42.6	1	12.3	52.7
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	14/08/2018		1.41	1379.6	6.96		81		8.7		7.7	11.6	654,000	1020	6	768	32.6	0.06	76.6	3.12	8.94	4	0.03	140	69.6	25.9	1.2	13.2	30.6
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	12/09/2018			3232	6.93		90		10		7.9	12.3	680,000	1000	4	805	45	<0.1	81.9	15.5	10	12	0.24	146	578	35.8	1.5	18.1	19.8
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	2/01/2019			904.97	7.29		28		8		7.5	8	495,000	790	3	546	59.6	0.84	50.8	321	6.85	<2	0.02	102	1750	464	2	1.46	687
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	19/03/2019			463.72	6.52		16		2		7.4	4.7	180,000	260	3	206	44.9	0.46	17.6	117	32.3	6	0.04	39.5	634	142	1.2	2.42	212
EB@GS327	3	East Branch Finniss River At Gauge Station 815 0327	9/05/2019			279.85	6.45		26		2		7.5	4.8	97,400	180	4	124	77.3	0.18	11.6	60	18.8	8	0.03	23.1	274	69.1	0.9	2.93	95.4
No. of samples				4.0	34.0	47.0	47.0	33.0	11.0	33.0	14.0	33.0	13.0	47.0	47.0	6.0	41.0	13.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	46.0	47.0	47.0
Minimum				17.6	1.0	75.7	5.9	7.6	16.0	9.0	1.5	1.8	7.1	2.4	20500.0	180.0	2.0	67.4	0.6	0.0	3.2	1.9	5.1	2.0	0.0	4.9	31.0	19.6	0.4	0.7	16.0
Maximum				50.0	38.8	3232.0	8.4	152.0	90.0	98.0	10.5	15.0	7.9	20.4	1060000.0	1020.0	7.0	864.0	124.0	2.6	117.0	1090.0	96.3	100.0	0.7	226.0	4310.0	788.0	3.9	27.7	1340.0
Mean				32.2	6.0	669.4	7.0	42.4	46.5	40.7	5.5	8.9	7.5	7.2	320217.0	693.3	3.5	460.6	34.4	0.3	36.5	89.5	25.9	24.8	0.1	68.0	467.7	112.9	1.2	5.9	142.6
Standard Deviation				13.6	6.6	605.1	0.5	31.2	27.9	25.0	3.6	3.6	0.2	4.3	282035.6	376.4	1.2	300.1	29.8	0.4	31.7	167.1	20.3	26.4	0.1	58.5	693.8	138.4	0.8	5.8	224.3
80th Percentile				40.2	7.9	1083.0	7.4	62.4	76.0	59.6	9.1	10.0	7.6	11.4	617000.0	1000.0	4.0	732.8	61.3	0.4	67.3	101.0	40.4	50.0	0.1	128.8	566.6	139.2	1.6	9.2	178.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	30/01/2013			307	7.22	36		43.92		<5		6.8	88,100		5		15	0.06	10.2	10.7	26.7	46	0.06	21.5	80.8	30.9	1.3	2.4	17.9
EBusFR	4	East Branch upstream of the Finniss River Confluence	11/02/2013		2.21	361.5	7.08																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	26/02/2013		14.43	189.5	5.97	25		30.5		<5		4	53,900		3		17.2	0.1	6.3	16.7	18.1	46	0.06	13.8	113	28.5	0.6	1.9	21.9
EBusFR	4	East Branch upstream of the Finniss River Confluence	11/03/2013		9.8	158.8	7.11																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	26/03/2013		5.18	193.4	6.33	23.6		26		<5		4	50,600		4		66	0.1	6.2	11.3	25.1	210	0.22	13	62.8	25.4	0.6	1.67	25.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	8/04/2013		4.74	161.1	6.51																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	23/04/2013		3	206.7	7.5	31		37.82		<5		3.9	64,100		3		15.3	0.1	8.9	19.8	10.8	14	0.05	16.5	109	35	0.6	2.05	28.9
EBusFR	4	East Branch upstream of the Finniss River Confluence	7/05/2013		1.19	431.7	7.11																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	22/05/2013		2.9	373.9	6.83	42		51.24		<5		4.7	114,000		5		26.3	0.12	14.5	11.4	14.2	12	0.01	28.3	197	40	1.6	2.17	33.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	3/06/2013		3.46	234.8	7.3																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	17/06/2013		1.32	301.7	7.08	52		49		<5		4.5	101,000		2		14.9	0.06	14	4.82	8.57	18	<0.01	26.6	51.2	28.2	0.5	3.04	17
EBusFR	4	East Branch upstream of the Finniss River Confluence	1/07/2013		1.04	373.4	7.67																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	15/07/2013		1.36	342.3	7.2	94		91		<5		4.6	89,800		2		1	0.04	18.4	14.9	4.86	8	<0.01	31.1	186	18.5	0.7	7.26	11.8
EBusFR	4	East Branch upstream of the Finniss River Confluence	3/12/2013		9.9	707	6.61	28		30		<5		6.1	320,000		4		7.8	0.36	35.4	66.9	36.7	42	1.34	65.4	189	136	1.6	1.31	141
EBusFR	4	East Branch upstream of the Finniss River Confluence	12/12/2013		10.3	381.3	6.78																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	7/01/2014		7.09	291.5	7.55	23.5		28		<5		4.3	95,100		3		8.4	0.06	10.8	9.03	10.7	16	<0.01	22.2	98.9	28.2	0.7	1.68	19.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	20/01/2014		14.3	158.1	7.14																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	4/02/2014		8.27	73.9	7.3	7		10		<5		2.4	18,900		3		33.2	0.06	3.2	15.2	30	68	0.4	4.7	95.5	17.5	0.6	1.5	29.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	14/02/2014		9.57	152.1	6.9																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	4/03/2014		4.27	203.9	6.42	30.8		28		<5		3.6	54,800		2		51.3	0.14	8.1	47.5	41.8	120	0.22	13.9	169	48.2	0.5	2.6	51
EBusFR	4	East Branch upstream of the Finniss River Confluence	18/03/2014		3.43	218.2	6.67																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	1/04/2014		4.01	339.8	7.02	41.4		50.508		<5		4.2	98,400		4		14.1	0.14	14.6	34.6	10.8	12	<0.01	25.7	193	50.9	0.6	3.44	42.5
EBusFR	4	East Branch upstream of the Finniss River Confluence	28/04/2014		3.35	548	6.9	90		87		<5		5.2	166,000		3		6.4	0.06	26.5	7.89	8.16	14	0.01	46.1	156	20.6	0.9	8.23	11.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	14/05/2014		2.69	543	7.32																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	27/05/2014			607	7.51	96		117.12		5		5.4	185,000				1.3	0.04	32.2	6.24	6.71	6	0.02	53.7	133	13.2	0.9	14.3	8.4
EBusFR	4	East Branch upstream of the Finniss River Confluence	10/06/2014		3.41	477.9	7.8																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	23/06/2014		0.95	392.8	7.57	130		142		<5		4.2	79,200		2		1.1	<0.02	23.8	10.1	5.71	6	<0.01	38.9	140	11.9	0.7	25.7	7.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	7/07/2014		10.83	384.6	6.12																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	22/07/2014		6.33	326.4	7.18	98		103		<5		4.9	88,200		2		0.9	0.04	20.1	17.7	5.11	2	0.01	34.6	370	24.3	0.7	7.06	13.5
EBusFR	4	East Branch upstream of the Finniss River Confluence	6/01/2015		13.64	200.2	6.15	16.8		16		<5		4.6	72,400				44.1	0.14	8.4	45.1	32.8	72	0.5	15.4	270	44.8	1.2	2.03	51.5
EBusFR	4	East Branch upstream of the Finniss River Confluence	20/01/2015		16.45	160.3	6.63																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	3/02/2015		7.74	136.2	6.37	19.8		22		<5		3.5	41,100		3		30.8	0.06	5.5	20.3	18.4	92	0.11	10.6	124	28.5	0.7	1.64	27.6
EBusFR	4	East Branch upstream of the Finniss River Confluence	17/02/2015		4.02		7.55																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	4/03/2015		5.91	138.3	6.57	20.6		20		<5		3.2	33,000		4		50	0.06	5.1	19.8	22.9	76	0.11	8.8	119	24.9	0.6	1.46	23.8
EBusFR	4	East Branch upstream of the Finniss River Confluence	18/03/2015		4.51	198.9	7.61																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	1/04/2015		4.65	165.5	6.79	33.4		30		<5		3.7	36,800		4		70.3	0.06	6.5	15.7	9.63	44	0.06	10.8	108	23.4	0.4	1.25	23
EBusFR	4	East Branch upstream of the Finniss River Confluence	16/04/2015		5.74	279.8	7.6																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	29/04/2015		2.2	360.2	7.18	68		83		<5		4.4	69,000		3		8.6	0.04	16.7	6.47	7.08	18	0.07	25.7	115	12.9	0.7	4.21	10.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	13/05/2015			413.7	7.38																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	27/05/2015		2.75	397.4	6.43	108		138		<5		3.8	41,400		2		15.5	<0.02	22.3	14.7	5.84	10	<0.01	31.8	261	14.3	0.8	17.3	6.9
EBusFR	4	East Branch upstream of the Finniss River Confluence	10/06/2015		2.35	380.1	7.1																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	24/06/2015		3.46	330	7.06	132		140		4.4		3.6	27,700		4		11.4	<0.02	19	13.7	4.68	12	0.01	29.4	171	12.3	0.6	26.2	8.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	5/01/2016		4.65	168.7	6.83	15.8		15		<5		3.2	47,400		4		39.5	0.12	6.4	49.9	30.6	80	0.19	11.2	251	43.8	1.2	1.88	48.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	21/01/2016		10.79	142.6	7.32																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	3/02/2016		5.74	130.9	6.78	22.4		15		1.8		3	33,900		3		23.1	0.08	5	21.9	21.7	66	0.15	9	115	25.7	0.7	1.5	26.5
EBusFR	4	East Branch upstream of the Finniss River Confluence	17/02/2016		4.58	121.3	6.86																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	1/03/2016		3.19	190.2	7.42	28		30		<5		3.3	47,000		3		13.8	0.08	7.2	19.5	14.7	30	0.04	12.5	118	29.9	0.6	1.53	26.5
EBusFR	4	East Branch upstream of the Finniss River Confluence	17/03/2016		3.73	208.3	6.92																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	29/03/2016		4.04	165	6.71	26		25		<5		3.4	38,500		5		11.3	0.04	5.9	11.4	11.3	36	0.03	11.1	78.3	21.3	0.6	1.38	19.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	12/04/2016		4.06	229	7.54																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	26/04/2016		2.5	359.2	6.61	44		76		<5		4.4	98,400		4		2.8	0.04	18.8	9.23	6.43	10	<0.01	30.3	224	15.9	1	3.97	9.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	13/05/2016		4.08	484.2	6.22																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	23/05/2016		2.2	375	6.66	104		107		<5		4.4	73,600		4		6.7	0.02	20.6	9.5	6.23	10	<0.01	32.6	307	14.1	1	8.95	7.8
EBusFR	4	East Branch upstream of the Finniss River Confluence	7/06/2016		2.03	394.5	6.87																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	20/06/2016		2.14	376.9	6.98	130		296		<5		3.7	33,100		3		8.3	<0.02	19.3	15	4.73	10	<0.01	30.3	253	12.9	0.8	25.5	6.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	31/01/2017	19.4		137.6	6.15							3.2	31,100		3		45.4	0.06	4.7	17.9	31.9	106	0.16	8.1	108	25.8	0.7	1.67	24.1
EBusFR	4	East Branch upstream of the Finniss River Confluence	27/02/2017		3.4	208.2	6.58				1.8		7.2	3.3	52400			75.4	113	0.08	7.9	32.3	46.8	216	0.41	13.5	154	40	0.5	2.25	46.8
EBusFR	4	East Branch upstream of the Finniss River Confluence	14/03/2017		3.68	146.9	6.69																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	4/04/2017		4.24	139.81	7.41		23		1.7		7.4	3.3	36,000			54.4	45.6	0.1	5.7	26.5	21.7	44	0.08	9.8	104	32.6	0.5	1.81	38.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	11/04/2017			203.66	5.73																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	26/04/2017	29.8		245.47	7.58		34		2.2		7.6	4	65200			92.9	41.7	0.1	9.5	32.2	10.1	14	0.03	16.8	178	45.2	0.6	2.36	44.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	29/05/2017			472.69	6.29		110		4.6		7.7	4.8	132000		2.3	246	11.1	0.04	27.5	11.1	7.99	10	0.18	43	212	17.8	0.8	10.7	12.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	7/06/2017			380.73	6.56																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	20/06/2017			499	7.32		151		4.8		7.7	3.9	68800		2.3	223	4.5	0.02	26.3	11.2	4.83	6	<0.01	38.1	178	12.2	0.7	20.9	8.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	4/07/2017			487.23	6.9																								

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1					190													594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2					2985													1,192,000						236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3					2985													997,000						150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4					472													761,000						117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6					190.7													594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7					190.7													594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EBusFR	4	East Branch upstream of the Finniss River Confluence	17/07/2017	118		416.81	6.41		146		4.6		7.6	3.7	40600		2.2	192	8.2	0.02	21.9	14.8	6.14	12	0.03	33.3	239	12.3	0.9	33.6	7
EBusFR	4	East Branch upstream of the Finniss River Confluence	23/11/2017			706.58	7.52																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	6/12/2017	57		646.03	6.71		57		4.9		7.2	4.1	238000			296	32	0.18	32	131	13.2	12	0.03	52.4	1450	98.9	2.4	3.35	74
EBusFR	4	East Branch upstream of the Finniss River Confluence	19/01/2018	246		255.57	7																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	15/02/2018			107.78	6.67																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	2/03/2018	26.4		179	7		25		1.4		7.7	3	44300		1.9	66.1	36.9	0.08	7	32.3	25.6	34	0.12	11.8	144	36.2	0.6	2.54	37.3
EBusFR	4	East Branch upstream of the Finniss River Confluence	15/03/2018			163	6.82																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	11/04/2018			246.6	7.33																								
EBusFR	4	East Branch upstream of the Finniss River Confluence	18/07/2018			49.95	6.99				4.5			4	47000	200	4.6	175	39.8	0.04	18.9	27.5	3.99	10	0.02	31	510	17.5	0.9	20.8	16.7
EBusFR	4	East Branch upstream of the Finniss River Confluence	5/02/2019			112.66	5.77		14		2		7.4	2.9	35200	90	3	50.8	85.1	0.06	5.7	20.2	29	74	0.19	8.9	89.2	23.2	1.1	1.75	26.9
EBusFR	4	East Branch upstream of the Finniss River Confluence	19/03/2019			409.48	6.16		32		4		7.5	4.3	153000	290	3	196	19.7	0.1	18.7	10.2	8.11	10	0.02	36.3	152	40	1.2	1.43	38.1
EBusFR	4	East Branch upstream of the Finniss River Confluence	8/04/2019			168.63	7.05		22		2		7.2	3.6	60900	110	2	79.6	42.9	0.1	7.3	14.1	12.5	18	0.04	14.9	111	29.3	0.8	1.7	30.2
EBusFR	4	East Branch upstream of the Finniss River Confluence	8/05/2019			267.88	6.87		33		2		7.7	4.8	88600	160	4	122	34.2	0.06	14.9	8.08	7.66	8	0.02	20.6	150	20.2	1	2.03	18.7
No. of samples				6.0	55.0	78.0	80.0	30.0	11.0	30.0	13.0	30.0	12.0	44.0	44.0	5.0	38.0	13.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
Minimum				19.4	1.0	0.0	0.0	7.0	14.0	10.0	1.4	1.8	7.2	2.4	18900.0	90.0	1.9	50.8	0.9	0.0	3.2	4.8	4.0	2.0	0.0	4.7	51.2	11.9	0.4	1.3	6.7
Maximum				246.0	16.5	707.0	7.8	132.0	151.0	296.0	4.9	5.0	7.7	6.8	320000.0	290.0	5.0	296.0	113.0	0.4	35.4	131.0	46.8	216.0	1.3	65.4	1450.0	136.0	2.4	33.6	141.0
Mean				82.8	5.2	289.6	6.8	53.9	58.8	64.6	3.1	3.7	7.5	4.0	78488.6	170.0	3.2	143.8	26.7	0.1	14.3	22.0	15.7	40.5	0.1	24.2	196.3	30.3	0.8	6.6	27.3
Standard Deviation				87.8	3.7	152.8	0.9	39.5	51.5	60.1	1.4	1.7	0.2	0.8	58636.3	79.7	0.9	81.9	24.3	0.1	8.7	21.3	11.3	48.6	0.2	14.1	211.6	22.4	0.4	8.5	23.2
80th Percentile				118.0	7.8	396.2	7.3	96.4	110.0	103.8	4.6	4.8	7.7	4.6	98400.0	218.0	4.0	212.2	43.4	0.1	21.1	29.4	26.0	69.6	0.2	33.8	230.0	40.0	1.0	9.7	38.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	30/01/2013			175.3	6.35	46		56.12		<5		4.7	21100		5		17.2	<0.02	7.4	1.55	8.85	156	0.1	11.7	17.6	6.43	1.1	1.08	3.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	26/02/2013		18.53	110	5.91	35		42.7		<5		3.1	9500		5		37.1	0.02	4.4	2.05	6.35	214	0.12	7.2	21	4.87	0.6	0.669	3
FR@GS204	6	Finniss River At Gauge Station 8150 204	26/03/2013		47.73	79.9	6.36	29.6		29		<5		2.4	2200		7		38.3	<0.02	3.3	0.3	2.13	216	0.11	4.7	5.72	1.52	0.6	0.275	1.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	23/04/2013		5.35	149.8	7.31	63		76.86		<5		3.3	14700		3		6.6	<0.02	8	2.89	4.16	90	0.03	12.9	28.9	7.18	0.5	0.755	5.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	22/05/2013		8.89	227.4	6.17	74		90.28		<5		4	23400		4		22.5	0.02	9.9	1.53	5.32	110	0.05	16.5	38	7.23	1.4	0.841	6.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	17/06/2013		2.79	256.3	6.89	99		119		<5		3.7	23400		2		10.1	<0.02	14.9	0.82	5.24	136	0.02	23.5	19.9	6.27	0.7	1.78	3.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	15/07/2013		2.13	302.1	7.78	262		177		<5		3.3	2800		2		2.1	<0.02	19.1	0.94	2.21	20	0.02	29.4	34.2	1.56	0.6	2.83	1.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	19/08/2013		2.26	397.7	7.48	199		212		<5		3	1900		4		8.1	<0.02	22.5	0.99	2.31	14	0.01	34.8	42.6	1.42	0.7	3.34	0.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	9/09/2013		2.07	415	6.82	224		220		<5		3.1	1700		3		6.1	<0.02	23.9	1.03	2.44	22	<0.01	36.6	58.9	1.46	0.7	3.16	1
FR@GS204	6	Finniss River At Gauge Station 8150 204	7/10/2013		2.4	397.4	7	176		223		<5		3.3	1300		3		12.2	<0.02	25	1.31	2.4	54	0.05	37.5	81.5	1.62	0.9	3.13	0.9
FR@GS204	6	Finniss River At Gauge Station 8150 204	5/11/2013		3.58	397.7	6.32	168		204		<5		3.2	2400				20.8	0.02	23.6	0.94	6.34	82	0.54	36	54	3.41	1.3	3.07	15.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	3/12/2013		10.47	552	6.19	42		42		<5		5.3	226000		5		4.4	0.1	27.8	14.9	9.84	40	0.02	48.5	117	4.63	2	0.657	37.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	7/01/2014		11.3	159.8	6.26	51		54		<5		3.6	21200		5		12.6	<0.02	7.2	1.43	5.41	200	0.08	11.6	28.6	6.07	0.8	0.615	3.9
FR@GS204	6	Finniss River At Gauge Station 8150 204	4/02/2014		6.97	87.1	6.58	12.4		14		<5		2.4	21700		3		89.7	0.04	3.8	6.12	26.9	134	1.32	6.2	49.4	16.2	0.6	1.3	26.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	4/03/2014		10.91	140.6	7.71	47.4		44		<5		3	11400		3		19.5	0.32	5.9	6.28	6.38	110	0.37	9	35.5	8.37	0.4	0.977	7.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	1/04/2014		5.67	219.8	7.93	62		75.64		<5		3.1	20100		3		5.4	<0.02	10.8	4.42	4.26	136	0.05	16.8	44.2	8.49	0.5	1.2	5.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	28/04/2014		5.49	246.8	7.95	103		105		<5		3.3	10800		2		6	<0.02	12.6	0.8	2.22	36	0.01	19.7	27.4	1.7	0.7	1.3	0.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	27/05/2014		1.9	297.4	7.55	138		168.36		<5		3.1	6400				4.1	<0.1	16.6	0.64	3.13	18	0.05	25.4	24.1	1.13	0.6	2.3	1.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	23/06/2014		3.76	309.7	6.49	90		183		<5		3	2200		2		1.7	<0.02	19.7	0.83	2.38	14	<0.01	31.1	32.7	0.89	0.6	2.82	0.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	22/07/2014		2.92	314.7	7.38	216		196		<5		3.1	1900		2		1.5	<0.02	23.5	0.85	1.98	10	0.01	35.5	36.7	0.91	0.6	3.24	0.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	18/08/2014		2.62	351.6	7.09	204		205		<5		3.1	1900		2		1.6	<0.02	24.3	0.78	2.2	16	0.01	36.8	34.4	0.88	0.7	3.26	0.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	16/09/2014		3.73		7.52	216		219		<5		3	2000		3		2.5	<0.02	24.1	1.08	2.3	26	0.02	38	73.4	1.12	0.7	3.49	0.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	13/10/2014		4.79	444.8	6.88	222		203		<5		3.2	1700		3		4.9	<0.02	25.2	1.76	2.29	52	0.05	40.1	117	1.43	0.8	4.32	0.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	11/11/2014		4.86	490.6	6.78	260		227		<5		3.5	2200		4		6.1	<0.02	25.3	2.18	2.57	90	0.05	40.4	203	1.95	1.4	4.91	0.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	10/12/2014		3.78	430.2	7.48	206		238		<5		3.1	2800		5		11.1	<0.02	22.5	0.93	2.15	74	0.07	37.7	67.1	1.2	1.1	3.28	0.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	8/01/2015		30.7	72.2	6.51	18		24		<5		2.7	7400				91.6	<0.02	3.3	4.09	7.13	214	0.17	5.1	29.9	5.28	1.1	0.685	6.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	4/02/2015		11.72	123	6.49	37.2		37		<5		2.9	7800		4		30.7	<0.02	4.5	2.39	5.44	230	0.09	7.1	23.8	4.9	0.6	0.547	3.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	6/03/2015		12.91	115.2	7.46	36.8		38		<5		2.8	10600		13		49.9	<0.02	5.2	3.99	7.8	138	0.1	7.8	35.1	6.75	0.5	0.686	5.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	2/04/2015		7.58	140.2	7.24	47.6		50		<5		3.1	11300		4		56.3	<0.02	6.4	2.87	5.22	138	0.08	9.9	34.8	6.18	0.5	0.684	5.9
FR@GS204	6	Finniss River At Gauge Station 8150 204	29/04/2015		5.18	304.5	6.96	112		126		<5		3.6	9700		3		9.1	<0.02	14.4	0.96	4.38	154	0.14	22.8	32.9	2	0.5	2.12	2.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	22/07/2015		2.26	352.8	6.6	100		200		<5		3.1	2300		2		20	<0.02	22.6	0.73	2.97	30	0.19	36.8	31.8	1.34	0.6	3.58	9.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	18/08/2015		3	347.4	6.71	196		210		<5		3.4	2600		2		2.4	<0.02	24.6	0.83	2.94	22	0.22	40.6	45.3	1.27	0.6	4.09	0.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	15/09/2015		1.88	447	7.14	222		231		<5		3.3	1800		3		1.7	<0.02	23.6	1.6	2.51	16	0.01	38.7	167	1.72	0.8	4.26	0.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	13/10/2015		1.81	479.4	7.6	328		250		<5		3.6	1500		5		1.5	<0.02	25	1.98	1.44	14	<0.01	43.5	274	1.82	1.2	3.88	0.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	9/11/2015		1.85	493.6	6.99	236		220		<5		3.7	2700		4		2.7	<0.02	26.5	1.15	2.76	24	0.02	45.3	88.4	2.01	1.3	5.72	0.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	10/12/2015		2.16	481.2	7.58	214		197		<5		3	5100		6		3.5	<0.02	21.1	1.13	2.74	32	0.04	39.4	51.6	1.78	1.3	5.39	0.9
FR@GS204	6	Finniss River At Gauge Station 8150 204	3/03/2016		9.99	142.1	7.5	37.2		47		<5		2.8	12300		3		14.4	<0.02	6.1	2.44	5.62	156	0.08	10	32.1	5.86	0.5	0.647	3.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	31/03/2016		7.3	144.4	7.45	48.6		45		<5		3.1	11700		3		10.5	<0.02	6.2	1.87	4.51	196	0.07	9.9	29	5.14	0.6	0.61	3.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	26/04/2016		3.53	260.1	7.18	110		106		<5		3.4	11700		4		4.3	<0.02	13	0.9	2.29	92	0.02	20.1	38.1	2.02	0.6	1.57	0.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	23/05/2016		7.06	108.1	7.1	82		90		<5		2.8	4000		5		11.7	<0.02	10.3	0.7	2.53	96	0.04	16.8	38	1.38	1.1	0.922	1.4
FR@GS204	6	Finniss River At Gauge Station 8150 204	20/06/2016		11.62	340.1	7.14	120		161		<5		3.1	2100		4		10.6	<0.02	17.8	0.76	2.13	16	0.02	28.2	46.4	1.04	0.8	2.9	1
FR@GS204	6	Finniss River At Gauge Station 8150 204	20/07/2016		3	389.5	7.53	166		168		<5		3	4500		5		7.8	<0.02	19.5	0.94	3.99	56	0.05	31.5	50	1.55	0.8	4.06	1.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	17/08/2016		2.88	398.7	7	146		209		<5		3.2	2300		3		17	<0.02	22.3	0.98	2.25	38	0.02	36.7	68.9	1.26	0.7	4.57	0.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	2/02/2017	24.20	9.25	86.4	6.34				1.8		7.6	2.6	6700		4		45.5	<0.02	3.7	2.59	9.32	238	0.15	5.7	25.6	5.01	0.4	0.523	6
FR@GS204	6	Finniss River At Gauge Station 8150 204	27/02/2019		7.82	146.3	7.31				2.1		7.7	2.9	13000			59.2	35.3	<0.02	6.7	4.91	7.68	122	0.06	10.3	36.9	8.15	0.5	0.817	7.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	4/04/2017		9.41	96.98	7.06		38		2		7.7	2.8	9300			42.6	30	<0.02	4.7 - 4.8	4.35	6.3	78	0.04	7.4	29.4	7.3	0.4	0.606	6.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	26/04/2017	74.00		176.25	7.38		64		2.6		7.9	3.2	17100			72.5	26.7	0.02	7.9	4.65	4.76	110	0.05	12.8	49.4	9.71	0.5	0.973	8.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	29/05/2017			294.44	6.95		139		3.1		8.1	3.4	7800		2.1	143	9.4	<0.02	15.9	0.91	2	20	<0.01	25.1	39.3	2	1	2.03	1.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	20/06/2017			392.15	7.08		178		3.3		8	3.2	3400		2	176	5.1	<0.02	19.5	0.92	2.05	16	<0.01	30.8	38.7	1.06	0.6	2.89	0.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	17/07/2017	160.00		385.06	6.98		204		3.2		8	3.1	1800		2.1	196	11.4	<0.02	22.1	0.93	2.6	18	0.04	34.1	52.2	1.13	0.7	2.91	2.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	15/08/2017	334.00		425.87	7.26		215		3.4		8	3.1	1700		2.1	209	17.7	<0.02	23.6	1	2.14	26	0.02	36.5	58.1	1.17	0.7	2.94	1.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	13/09/2017	336.00		428.64	6.44		215		3.3		8	2.9	1900		2.9	210	7.9	<0.02	23.2	1.12	2.18	22	0.04	36.9	83.7	1.24	0.7	3.66	1.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	11/10/2017	166.00		452.9	7.74		219		3.5		8.3	3.2	1800		3.1	230	20.8	<0.02	25.5	1.35	1.94	64	0.03	40.5	126	1.36	0.8	3.5	2.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	8/11/2017	174.00		438.01	7.41		207		3.7		8.1	3.1	2000			209	15.5	<0.02	23.6	0.84	1.89	52	0.06	36.5	66.9	1.07	0.9	2.68	2.8
FR@GS204	6	Finniss River At Gauge Station 8150 204	6/12/2017			308.34	7.73																								
FR@GS204	6	Finniss River At Gauge Station 8150 204	3/01/2018	242.00		357.22	7.57		179		3.3		7.9	3.1	1100			164	16.3	<0.02	19.8	0.66	2.37	48	0.05	27.8	38.6	1.21	0.8	1.98	2.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	26/04/2018	98.00		155.6	7.67		73		2.6		7.7	3	11700		2.8	82.4	46.5	<0.02	9.4	1.27	3.22	134	0.05	14.3	35.3	3.56	0.7	1	4.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	19/07/2018			53.15	6.61				4.1			3	1800	200	4.6	184	10.5	<0.02	20.6	0.95	1.88	18	<0.01	32.1	53.8	0.86	0.6	2.94	2.2
FR@GS204	6	Finniss River At Gauge Station 8150 204	15/08/2018		3.09	373.12	7.12		211		4.6		8.2	2.5	20100	240	5	230	37.4	<0.02	32.4	0.03	0.2	14	0.06	36.2	6.29	0.18	0.2	0.385	2.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	11/09/2018			1165	6.99		210		3.5		8.3	3.1	1700	220	3	216	14.2	<0.02	24.8	1	1.74	58	0.05	37.4	78.6	0.88	0.7	3.17	1.5

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190											594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985											1,192,000						236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985											997,000						150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472											761,000						117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7											594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7											594,000						117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FR@GS204	6	Finniss River At Gauge Station 8150 204	16/10/2018			454.73	6.8		218		4		8	3.3	2000	270	2	223	21.8	<0.02	25.1	1.21	1.94	56	0.06	38.9	136	1.2	1.2	2.92	3.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	7/11/2018			349.72	7.73		220		4		8.1	3.2	1800	220	8	222	68.5	<0.02	24.8	0.92	1.72	64	0.06	38.8	88.4	0.97	1.1	3.02	4.6
FR@GS204	6	Finniss River At Gauge Station 8150 204	3/12/2018			157.17	7.27		64		6		7.6	2.8	1100	110	8	67.5	89.6	<0.02	8.3	0.64	3.44	370	0.28	11.4	47.7	1.09	2.7	0.524	2.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	3/01/2019			232.15	7.29		104		4		7.8	2.6	1700	130	4	106	61.6	<0.02	11.8	0.86	2.34	204	0.12	18.5	64.4	0.81	1.6	0.727	2.3
FR@GS204	6	Finniss River At Gauge Station 8150 204	19/03/2019			204.5	6.53		68		4		7.8	3.3	13700	110	3	83.7	20.6	<0.02	9.5	0.68	2.17	34	0.02	14.6	21.3	3.15	1.1	0.509	2.1
FR@GS204	6	Finniss River At Gauge Station 8150 204	8/05/2019			159.91	6.85		46		4		7.8	3.7	26300	110	5	72.8	34.6	<0.02	8.5	1.33	4.04	52	0.04	12.5	39.3	5.73	1.2	0.764	5.5
FR@GS204	6	Finniss River At Gauge Station 8150 204	23/07/2019						178		4			3.5	2000	180	2	179	35.2	<0.02	19.6	0.67	1.63	14	<0.01	31.7	41.5	1.21	0.8	3.19	2.7
FR@GS204	6	Finniss River At Gauge Station 8150 204	30/01/2013			175.4	6.36	24		56.13		<5		4.8	21101		5		17.3	<0.03	7.5	1.56	8.86	156	0.1	11.8	17.7	6.44	1.1	1.08	3.3
No. of samples				9.0	46.0	67.0	68.0	44.0	20.0	44.0	23.0	44.0	21.0	67.0	67.0	10.0	59.0	22.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Minimum				24.2	1.8	53.2	5.9	12.4	38.0	14.0	1.8	0.0	7.6	2.4	1100.0	110.0	2.0	42.6	1.5	0.0	3.3	0.0	0.2	10.0	0.0	4.7	5.7	0.2	0.2	0.3	0.3
Maximum				336.0	47.7	1165.0	8.0	328.0	220.0	250.0	6.0	0.0	8.3	5.3	226000.0	270.0	13.0	230.0	91.6	0.3	32.4	14.9	26.9	370.0	1.3	48.5	274.0	16.2	2.7	5.7	37.8
Mean				178.7	7.2	293.4	7.1	125.6	152.5	133.8	3.5		7.9	3.2	10756.7	179.0	3.8	153.5	20.9	0.1	16.3	1.8	4.0	85.4	0.1	25.4	55.0	3.2	0.8	2.2	3.8
Standard Deviation				108.8	8.1	173.2	0.5	83.6	69.4	77.5	0.9		0.2	0.5	27629.2	60.1	1.9	66.3	21.7	0.1	8.1	2.1	3.6	75.2	0.2	12.9	44.9	3.0	0.4	1.4	5.7
80th Percentile				278.8	10.0	423.7	7.5	214.8	215.0	210.8	4.0		8.1	3.4	12860.0	224.0	5.0	214.8	35.1	0.1	24.1	2.3	5.4	138.0	0.1	37.5	68.5	6.0	1.1	3.3	5.4
FRdsFC	7	Finniss River downstream Florence Creek	1/02/2013			118.8	6.73	35		42.7		<5		2.7	12000		5		26.5	<0.02	4.7	0.43	6.83	282	0.16	7.9	14.2	2.74	0.8	0.477	1.4
FRdsFC	7	Finniss River downstream Florence Creek	28/02/2013			58.6	5.87	22		26.84		<5		2.7	4900		5		63.7	0.02	2.6	0.62	8.61	320	0.21	4.3	9.73	2.9	0.4	0.49	1.7
FRdsFC	7	Finniss River downstream Florence Creek	28/03/2013		30.57	23.4	6.03	7.3		6		<5		1.4	1000		5		85.7	0.02	0.7	0.3	3.21	182	0.14	1.1	3.88	1.29	0.4	0.218	1.9
FRdsFC	7	Finniss River downstream Florence Creek	26/04/2013		4.41	82.3	5.62	32		39.04		<5		2.6	6600		4		10.9	<0.02	3.7	0.55	2.64	208	0.08	6.2	14.1	1.57	0.4	0.254	2.1
FRdsFC	7	Finniss River downstream Florence Creek	24/05/2013		11.66	92.1	7.22	25		30.5		<5		2.8	11300		5		34.4	<0.02	3.5	0.25	1.41	164	0.05	6.1	9.66	1.12	0.9	0.294	1.3
FRdsFC	7	Finniss River downstream Florence Creek	19/06/2013		3.01	82.2	6.26	7.5		31		<5		2.4	7800		3		17.8	<0.02	3.6	0.3	1.7	206	0.05	6.4	13.6	1.2	0.4	0.245	1
FRdsFC	7	Finniss River downstream Florence Creek	17/07/2013		2.75	60.5	7.26	17.8		23		<5		2	3600				7.8	<0.02	2.3	0.44	0.91	124	0.02	4.1	23.7	0.76	0.4	0.167	0.9
FRdsFC	7	Finniss River downstream Florence Creek	17/07/2013		2.75	60.5	7.26	17.8		23		<5		2	3600		2		10.5	<0.02	2.3	0.4	0.93	158	0.04	4.1	23.8	0.93	0.4	0.167	0.8
FRdsFC	7	Finniss River downstream Florence Creek	20/08/2013		1.76	48.8	5.52	18.1		17		<5		1.8	1800		4		16.2	<0.02	1.8	0.32	0.86	148	0.04	3.2	15	0.58	0.2	0.155	0.5
FRdsFC	7	Finniss River downstream Florence Creek	10/09/2013		2.26	36.2	6.5	11.8		12		<5		1.8	700		2		21.8	<0.02	1.2	0.3	1.15	218	0.07	2.1	19.1	0.65	0.3	0.131	1.2
FRdsFC	7	Finniss River downstream Florence Creek	8/10/2013		1.84	41	6.21	14.6		12		<5		1.9	500		2		24.2	<0.02	1.2	0.14	1.12	354	0.1	2.2	13.4	0.68	0.4	0.136	0.9
FRdsFC	7	Finniss River downstream Florence Creek	7/11/2013		2.64	94.6	5.66	30.6		40		<5		2.5	1800				19.1	<0.02	3.9	0.1	1.33	310	0.12	7	6.09	1.13	1.1	0.388	2.9
FRdsFC	7	Finniss River downstream Florence Creek	5/12/2013		25.53	70.5	5.88	275		28		<5		1.8	1000		5		46.7	<0.02	2.8	0.36	3.16	412	0.62	4.5	14.8	1.54	1.1	0.287	1.2
FRdsFC	7	Finniss River downstream Florence Creek	9/01/2014		9.58	93.4	6.39	27		29		<5		2.7	10200		5		23.8	<0.02	3.7	0.49	5.37	286	0.13	6.3	22.8	2.61	0.7	0.387	1.1
FRdsFC	7	Finniss River downstream Florence Creek	10/02/2014		16.6	31.9	6.03	4.4		8		<5		1.5	1900		4		34.7	0.02	1.1	1.08	4.61	196	0.4	1.7	15.2	2.07	0.3	0.24	9.3
FRdsFC	7	Finniss River downstream Florence Creek	6/03/2014		30.7	41.9	7.21	12.4		10		<5		1.4	2000		4		33	<0.02	1.1	0.36	1.74	142	0.1	1.9	10.6	0.94	0.4	0.126	1.2
FRdsFC	7	Finniss River downstream Florence Creek	4/04/2014		4.09	97.7	6.53	31.6		38.55		<5		2.3	4700		3		14.6	<0.02	3.8	0.38	1.71	158	0.05	6.2	12.9	1.32	0.3	0.294	2.9
FRdsFC	7	Finniss River downstream Florence Creek	1/05/2014		4.3	97.1	6.71	40		39		<5		2.5	3300		3		16.8	<0.02	4	0.32	1.3	198	0.06	6.5	15	1.02	0.5	0.345	1.3
FRdsFC	7	Finniss River downstream Florence Creek	31/05/2014		2.69	67.7	5.89	33		29		<5		2.1	2000		2		7	<0.02	3	0.37	0.86	164	0.03	5.2	17.2	0.67	0.3	0.281	0.6
FRdsFC	7	Finniss River downstream Florence Creek	25/06/2014		2.33	55.2	5.91	22.4		25		<5		1.9	1400		2		7.9	<0.02	2.5	0.37	0.76	138	0.02	4.4	15.4	0.6	0.2	0.322	0.4
FRdsFC	7	Finniss River downstream Florence Creek	24/07/2014		1.87	58.7	6.35	25		22		<5		1.9	1000		2		10.2	<0.02	2.2	0.37	0.74	142	0.04	3.8	16.5	0.53	0.2	0.306	0.8
FRdsFC	7	Finniss River downstream Florence Creek	19/08/2014		1.98	39.2	6.38	12		12		<5		1.7	400		2		11	<0.02	1.3	0.43	0.79	174	0.05	2.2	15.2	0.5	0.1	0.19	0.7
FRdsFC	7	Finniss River downstream Florence Creek	17/09/2014		3.6	27.7	7.6	12		6		<5		1.6	300		2		19.3	<0.02	0.6	0.43	0.9	196	0.07	1.2	16.2	0.52	0.1	0.108	0.9
FRdsFC	7	Finniss River downstream Florence Creek	14/10/2014		3.18	21.9	7.31	13.6		2		<5		1.6	200		2		27.6	<0.02	0.3	0.56	1.15	236	0.1	0.6	19.2	0.71	0.2	0.099	2.2
FRdsFC	7	Finniss River downstream Florence Creek	13/11/2014		5.07	20.5	8.61	16.2		19.764		<5		1.6	100		2		17.5	<0.02	0.4	0.95	0.92	196	0.07	0.6	35.9	0.79	0.1	0.094	1.7
FRdsFC	7	Finniss River downstream Florence Creek	11/12/2014		10.62	33.5	5.46	3.5		3		<5		2	500		7		82.9	<0.02	0.4	0.71	2.43	298	0.11	0.8	18.5	0.98	1.2	0.149	3.3
FRdsFC	7	Finniss River downstream Florence Creek	8/01/2015		41.03	38.8	5.75	8.8		8		<5		2.1	3500				107	<0.02	1.3	1.17	6.65	196	0.19	2.1	14.8	2.82	0.8	0.385	10
FRdsFC	7	Finniss River downstream Florence Creek	5/02/2015		9.29	59.6	6.67	172		20		<5		2.3	3800		4		63.3	<0.02	2.3	0.93	4.51	262	0.14	3.7	15.9	2.15	0.5	0.338	2.4
FRdsFC	7	Finniss River downstream Florence Creek	6/03/2015		9.57	59.1	6.48	16.6		16		<5		2.1	4000		4		57.4	<0.02	2.2	0.84	4.66	180	0.13	3.4	14.3	2.1	0.3	0.323	3.1
FRdsFC	7	Finniss River downstream Florence Creek	2/04/2015		9.95	67.1	7.32	21.6		23		<5		2.7	4800		4		75	<0.02	2.6	0.61	3.85	224	0.15	4.3	13.7	1.83	0.2	0.329	4.1
FRdsFC	7	Finniss River downstream Florence Creek	30/04/2015		2.82	83.6	6.81	28.2		30		<5		2.4	5000		3		12.7	<0.02	3.3	0.39	1.37	224	0.08	5.6	13.5	0.96	0.2	0.248	1.1
FRdsFC	7	Finniss River downstream Florence Creek	26/05/2015		2.59	71.2	7.26	24.6		24		<5		2.1	1800		2		16.5	<0.02	2.6	0.4	0.96	150	0.04	4.4	15.1	0.73	0.3	0.219	0.8
FRdsFC	7	Finniss River downstream Florence Creek	1/07/2015		2.52	50.7	7.28	18		17		2.3		1.9	600		2		22.7	<0.02	1.8	0.38	0.81	172	0.05	3.2	13.5	0.57	0.2	0.199	1.2
FRdsFC	7	Finniss River downstream Florence Creek	23/07/2015		2.5	38.2	6.98	12.4		12		<5		1.8	400		2		35.4	<0.02	1.2	0.4	0.87	174	0.07	2.2	12	0.52	0.2	0.153	1.3
FRdsFC	7	Finniss River downstream Florence Creek	19/08/2015		4.81	23.6	7.38	11.9		7		<5		1.7	300		2		26.9	<0.02	0.8	0.73	1.15	166	0.09	1.4	22.1	0.69	0.2	0.132	1.1
FRdsFC	7	Finniss River downstream Florence Creek	16/09/2015		3.17	18.4	6.95	3.2		3		<5		1.5	100		2		27.4	<0.02	0.4	0.83	1.26	164	0.09	0.6	23.2	0.75	0.1	0.112	1.6
FRdsFC	7	Finniss River downstream Florence Creek	13/10/2015		3.15	17.1	7.04	2.4		3		<5		1.6	200		5		19.6	<0.02	0.3	1.05	1.2	136	0.07	0.5	24.7	0.71	0.2	0.099	1.3
FRdsFC	7	Finniss River downstream Florence Creek	10/11/2015		4.3	15.5	7.33	2.6		2		<5		1.6	200		3		26.5	<0.02	0.4	1.91	1.36	240	0.11	0.5	42.6	0.85	0.1	0.111	1.5
FRdsFC	7	Finniss River downstream Florence Creek	11/12/2015		11.59	21.9	6.17	2.8		2		<5		1.8	400		9		82.8	<0.02	0.3	1.27	2.09	266	0.1	0.6	25.4	1	0.8	0.171	2.5
FRdsFC	7	Finniss River downstream Florence Creek	6/01/2016		11.25	60.6	6.48	22.6		13		<5		2.4	6500		6		30	<0.02	2.9	1.8	9.79	274	0.23	4.8	25.8	3.97	0.8	0.545	4.5
FRdsFC	7	Finniss River downstream Florence Creek	5/02/2016		13.84	30.3	6.59	9.07		7		1.5		1.7	1700		5		62.1	<0.02	1	0.47	3.21	184	0.11	1.6	7.97	1.3	0.4	0.219	3.6
FRdsFC	7	Finniss River downstream Florence Creek	4/03/2016		6.27	62.1	6.28	22.2		17		<5		2.2	3500		4		22.3	<0.02	2.1	0.55	3.26	242	0.12	3.7	13.5	1.57	0.4	0.228	2.4
FRdsFC	7	Finniss River downstream Florence Creek	1/04/2016		5.85	82.3	6.94	26		24		<5		2.5	5000		3		16.7	<0.02	2.9	0.44	2.81	278	0.12	4.8	12.9	1.44	0.3	0.258	1.2
FRdsFC	7	Finniss River downstream Florence Creek	28/04/2016		2.99	70.3	7.11	28		28		<5		2.3	3200		3		10.8	<0.02	2.9	0.51	1.24	176	0.06	4.9	21.4	0.96	0.3	0.185	0.7
FRdsFC	7	Finniss River downstream Florence Creek	25/05/2016		2.9	90.2	6.56	24.8		29		<5		2.4	7000		3		11.2	<0.02	3.8	0.56	1.22	136	0.04	6.3	29.2	0.91	0.4	0.256	1.1
FRdsFC	7	Finniss River downstream Florence Creek	22/06/2016		4.88	32.4	6.94	12.2		31		<5		1.8	2400		3		18.6	<0.02	1.4	0.49	0.97	120	0.05	2.5	18.6	0.58	0.3	0.087	1.6
FRdsFC	7	Finniss River downstream Florence Creek	21/07/2016		3.41	68	6.53	22.8		22		<5		2.1	2200		4		23.7	<0.02	2.4	0.3	1.22	122	0.05	4.1	12.9	0.78	0.5	0.13	1.3
FRdsFC	7	Finniss River downstream Florence Creek	17/08/2016		3.38	27.6	6.65	9.2		6		<5		1.6	400		2		34.1	<0.02	0.7	0.6	1.18	198	0.09	1.2	22.3	0.61	0.2	0.1	1.2
FRdsFC	7	Finniss River downstream Florence Creek	2/02/2017	8.4		36.1	7.1				1.4		7.2	1.7	2200		4		65.5	<0.02	1.2	0.64	4.47	212	0.13	1.8	10.6	1.51	0.2	0.218	6
FRdsFC	7	Finniss River downstream Florence Creek	27/02/2019		6.25	75.1	7.24				2		7.2	2.3	5200			30.2	42.2	<0.02	3.3	0.73	4.4	170	0.1	5.3	15	2	0.3	0.301	4.9
FRdsFC	7	Finniss River downstream Florence Creek	7/04/2017			64.98	6.41		23		2.4		7.3	2.4	4300			23.8	64.5	<0.02	2.6	0.62	5.02	212	0.17	4.2	12.6	2.3	0.3	0.286	9.1
FRdsFC	7	Finniss River downstream Florence Creek	28/04/2017	25.6		77.05	7.92		28		2.5		7.5	2.5	5900			29.5	49.7	<0.02	3.2	1	2.73	244	0.12	5.3	25.4	2.07	0.4	0.266	3.8
FRdsFC	7	Finniss River downstream Florence Creek	29/05/2017			87.56	7.05		32		2.4		7.3	2.3	3600		2	33.1	12	<0.02	3.4	0.51	1.13	184	0.04	6	23.9	0.93	0.3	0.277	1.3
FRdsFC	7	Finniss River downstream Florence Creek	22/06/2017			75.11	6		28		2.3		7.5	2.1	1900		1.9	26.7	11.8	<0.02	2.8	0.46	0.78	138	0.04	4.8	18.7	0.66	0.3	0.254	1.1
FRdsFC	7	Finniss River downstream Florence Creek	19/07/2017	23		53.72	7.2		24		2.2		7.3	1.9	700		2.3	22.7	18.6	<0.02	2.3	0.39	0.94	212	0.05	4.1	19.7	0.69	0.3	0.243	1.2
FRdsFC	7	Finniss River downstream Florence Creek	17/08/2017	15.4		41.89	6.77		21		2.2		6.9	1.8	400		1.7	16.6	20.5	<0.02	1.7	0.39	0.79	166	0.05	3	18.7	0.59	0.2	0.178	0.8
FRdsFC	7	Finniss River downstream Florence Creek	14/09/2017	4.8		17.21	6.34		5		2.1		6.7	1.4	100		2.2	3.8	19.1	<0.02	0.4	0.48	0.87	124	0.05	0.7	18.7	0.51	0.2	0.086	2.5
FRdsFC	7	Finniss River downstream Florence Creek	8/11/2017	10.4		49.45	6.42		21		2.6		7.7	1.7	2700			14.7	31.2	<0.02	1.6	0.96	1.68	268	0.12	2.6	37.5	1.21	0.6	0.196	2.3
FRdsFC	7	Finniss River downstream Florence Creek	7/12/2017	31.6		67.37	6.87		28		2.7		7.4	1.8	900			26.3	54.1	<0.02	2.8	0.34	1.89	262	0.11	4.7	22.8	1.02	0.7	0.258	5.8
FRdsFC	7	Finniss River downstream Florence Creek	2/03/2018	18.8		59.37	7.06		17		1.6		7.6	2	4200			20.8	30.8	<0.02	2.3	0.77	4.93	222	0.13	3.6	11.8	2.27	0.4	0.344	3.9
FRdsFC	7	Finniss River downstream Florence Creek	19/07/2018			80.2	7.42				2.5			1.9	800	50	3.8	23.5	23.5	<0.02	2.5	0.38	0.88	114	0.05	4.2	17.1	0.56	0.3	0.293	7.9
FRdsFC	7	Finniss River downstream Florence Creek	16/08/2018			54.9	7.24		21		2.2		7.3	1.8	400	30	5	19.4	51.8	<0.02	2.1	0.34	0.8	176	0.09	3.5	15.5	0.57	0.2	0.245	3
FRdsFC	7	Finniss River downstream Florence Creek	12/09/2018			88.07	7.17		12		2.3		7.3	1.7	300	20	2	13.2	22.2	<0.02	1.4	0.32	0.79	134	0.06	2.4	16.4	0.52	0.2	0.165	1.8
FRdsFC	7	Finniss River downstream Florence Creek	16/10/2018			18.32	6.2		3		2.1		6.2	1.5	<100	10	<1	3.9	22.1	<0.02	0.4	0.55	1.07	168	0.08	0.7	22.3	0.61	0.2	0.093	3.1
FRdsFC	7	Finniss River downstream Florence Creek	7/11/2018			15.3	6.07		3		<2		6.3	1.7	200	20	7	4.7	203	0.02	0.6	1.15	0.95	284	0.17	0.8	40.7	0.72	0.3	0.092	

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data - LDQWO sites

Zone 1						190												594,000									117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 2						2985												1,192,000									236			89	60.2	300.0		86.6	795	130.40			210.5
Zone 3						2985												997,000									150			25.9	27.5	300.0		86.6	443	43.10			180
Zone 4						472												761,000									117			3.6	7.9	300.0		33.2	228	32.50			180
Zone 6						190.7												594,000									117			2.8	3.4	300.0		33.2	140	20.00			26.1
Zone 7						190.7												594,000									117			2.8	3.4	300.0		33.2	140	20.00			26.1
Location code	Zone site located	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Filtered)	Alkalinity (Bicarbonate)	Bicarbonate (Filtered)	Chloride	Chloride (Filtered)	pH (Lab)	Sodium (Filtered)	Sulphate (Filtered)	TDS	TOC	Hardness as CaCO3	Aluminium (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Potassium (Filtered)	Uranium (Filtered)	Zinc (Filtered)			
Note Numbers in Red text (<) are below detection limit.				mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L			
FRdsFC	7	Finniss River downstream Florence Creek	3/12/2018	24		178.38	7.43		91		4		7.8	2.7	1600	120	3	90.5	38.9	<0.02	9.7	0.1	1.7	76	0.04	16.1	5.47	1.29	1	2.69	1.4			
FRdsFC	7	Finniss River downstream Florence Creek	3/01/2019			178.38	7.34		47		4		7.6	2.1	600	60	2	47.9	55.1	<0.02	5.2	0.08	1.02	142	0.04	8.5	4.78	0.7	0.6	0.608	1.8			
FRdsFC	7	Finniss River downstream Florence Creek	3/01/2019			122.38	7.11																											
FRdsFC	7	Finniss River downstream Florence Creek	7/02/2019			48.71	6.27		12		2.2		7.4	2.3	4400	30	4	17.5	129	<0.02	2	0.64	7.81	262	0.21	3.1	9.96	2.81	0.6	0.523	2.7			
FRdsFC	7	Finniss River downstream Florence Creek	21/03/2019			139.57	6.89		47		2		7.8	3	12400	90	4	60.4	31.1	<0.02	6.6	0.21	2.96	52	0.05	10.7	7.08	1.82	1	0.472	1.3			
FRdsFC	7	Finniss River downstream Florence Creek	10/04/2019			51.1	6.79		16		2		7.1	2.3	4700	30	3	17.5	50.4	<0.02	1.8	0.32	4.38	156	0.11	3.1	7.38	1.73	0.6	0.336	2.3			
FRdsFC	7	Finniss River downstream Florence Creek	10/05/2019			86	6.63		24		4		7.6	3	7400	50	5	30.4	50	<0.02	3.3	0.45	3.68	132	0.09	5.4	17.3	1.78	1	0.286	3.6			
FRdsFC	7	Finniss River downstream Florence Creek	24/07/2019			33.14	7.21		8		2			1.8	1200	30	1	9	49.3	<0.02	1	0.45	0.95	154	0.06	1.6	19.1	0.58	0.3	0.057	3.2			
No. of samples				9.0	47.0	73.0	73.0	48.0	21.0	48.0	24.0	48.0	22.0	72.0	72.0	12.0	63.0	23.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	71.0			
Minimum				4.8	1.8	15.3	5.5	2.4	3.0	2.0	1.4	1.5	6.2	1.4	100.0	10.0	1.0	3.8	7.0	0.0	0.3	0.1	0.7	52.0	0.0	0.5	3.9	0.5	0.1	0.1	0.4			
Maximum				31.6	41.0	178.4	8.6	275.0	91.0	42.7	4.0	2.3	7.8	3.0	12400.0	120.0	9.0	90.5	203.0	0.0	9.7	1.9	9.8	412.0	0.6	16.1	42.6	4.0	1.2	2.7	10.0			
Mean				18.0	7.5	60.9	6.7	26.4	24.3	19.1	2.4	1.9	7.3	2.0	2925.4	45.0	3.4	25.5	36.7	0.0	2.3	0.6	2.4	196.6	0.1	3.8	17.3	1.2	0.4	0.3	2.4			
Standard Deviation				8.9	8.5	34.0	0.6	43.9	19.5	11.7	0.7	0.6	0.4	0.4	2953.0	32.1	1.6	19.4	31.6	0.0	1.6	0.3	2.0	64.5	0.1	2.6	7.6	0.7	0.3	0.3	2.1			
80th Percentile				24.6	10.5	83.1	7.2	27.6	28.0	29.0	2.6	2.1	7.6	2.4	4800.0	58.0	5.0	30.3	53.6	0.0	3.3	0.7	3.8	258.4	0.1	5.4	22.7	1.8	0.6	0.3	3.2			

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
DOHSE1	Dyson's Overburden Heap Seep 1	15/04/2009	1		4851	2.94								3,430,000				154000	2.6	115	648	188	49000	<0.1	497	10700	2100		1980	265
DOHSE1	Dyson's Overburden Heap Seep 1	28/03/2012			2767	2.91																								
DOHSE1	Dyson's Overburden Heap Seep 1	15/03/2017		1.15		2.55		<1		1.9		2.8	2.9	2,170,000				79,800	1.6	9294	412	147	35300	0.3	334340	6,460	1200	0.8	1210	160
DOHSE1	Dyson's Overburden Heap Seep 1	24/03/2017			3793.8	2.52																								
DOHSE1	Dyson's Overburden Heap Seep 1	10/04/2017			3537.3	2.62																								
DOHSE1	Dyson's Overburden Heap Seep 1 (duplicate sample)	27/04/2017			3915.5	2.38		<1		1.6		2.8	3.4	2,480,000			1870	98000	1.8	106	447	148	33000	0.3	385389	7310	1350	0.5	1310	164
DOHSE1	Dyson's Overburden Heap Seep 1	27/04/2017			3915.5	2.38		<1		1.5		2.8	2.9	2,610,000				115000	1.8	112	490	190	55900	0.2	362364	6300	1510	0.4	1470	164
DOHSE1	Dyson's Overburden Heap Seep 1	15/02/2018			5630.5	2.5		<1		1.6		2.7	2.3	3,340,000			2190	147000	2.5	161	622	249	127000	0.21	433	7900	1890	<1	1710	207
DOHSE1	Dyson's Overburden Heap Seep 1	28/02/2018			2910.5	2.84		<1		1.7		2.8	2.8	2,520,000				89900	1.78	120	412	158	33700	0.29	392	7000	1230	0.4	1280	148
DOHSE1	Dyson's Overburden Heap Seep 1	14/03/2018			3363	2.91		<1		1.8		2.9	3.5	2,260,000				75200	1.84	106	367	107	10900	0.16	381	6,910	1120	1.6	1130	148
DOHSE1	Dyson's Overburden Heap Seep 1	24/04/2018			3356.6	3.01		<1		1.7		3	3.4	2,470,000				73500	1.78	147	411	82.5	17600	0.26	413	8,340	1330	<0.1	815	179
No. of samples			0.0	0.0	12.0	12.0	0.0	1.0	0.0	1.0	9.0	3.0	9.0	10	1.0	1.0	1.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0
Minimum			0.0	0.0	657.0	4.2	0.0	0.0	0.0	1.2	0.0	4.1	2.3	276,000	480.0	1.0	271.0	55.0	0.2	36.4	13.0	1.4	200.0	0.7	43.8	1740.0	11.0	0.2	10.0	8.0
Maximum			0.0	0.0	2103.0	4.7	0.0	0.0	0.0	1.2	0.0	4.7	5.7	1,440,000	480.0	1.0	271.0	14900.0	1.0	194.0	10700.0	5040.0	2740.0	22.8	216.0	26500.0	8030.0	1.4	224.0	311.0
Mean					1414.0	4.3				1.2		4.3	3.8	855,100	480.0	1.0	271.0	8817.5	0.6	112.4	5062.7	2656.0	985.8	3.7	125.3	12786.0	3966.4	0.8	143.2	185.0
Standard Deviation					507.5	0.1						0.3	1.3	470,055				3486.8	0.3	64.3	3730.9	1602.1	803.7	6.8	69.3	8919.5	2744.5	0.5	59.3	85.5
80th Percentile					1923.8	4.4				1.2		4.5	5.2	1,406,000	480.0	1.0	271.0	10788.0	0.8	190.4	8430.0	4110.0	1269.2	2.9	207.2	21780.0	6508.0	1.3	190.6	258.0
DOCC	Dyson's Open Cut Seepage Creek	19/01/2011			2228	3.65					<5		4.6	1,460,000				11600	1.4	126	15900	18500	200	4.8	234	34900	12900	1.5	937	562
DOCC	Dyson's Open Cut Seepage Creek	16/03/2011			2872	3.36					<5		3.8	1,730,000				17,000	1.66	158	18400	27300	11300	6.84	259	39900	15500	1.2	1030	705
DOCC	Dyson's Open Cut Seepage Creek	13/04/2011			3051	3.42					<5	3.3	4.7	1,900,000				18,900	1.96	180	20500	29600	9920	6.96	282	41,800	16300	1	1070	792
DOCC	Dyson's Open Cut Seepage Creek	10/05/2011			4041	3.38					<5		5.8	2,940,000				26400	2.92	275	32600	35700	9700	9.6	450	72,400	25700	1.7	1700	1170
DOCC	Dyson's Open Cut Seepage Creek	6/06/2011			4247	3.79					5		7.5	3,450,000				38000	5	293	36200	47300	<2000	7	566	75,200	28000	1.5	2020	1290
DOCC	Dyson's Open Cut Seepage Creek	21/12/2011			4549	3.75					5			2,990,000					2.52	271	22700	29000	144	5.03	515	51500	19700		1590	860
DOCC	Dyson's Open Cut Seepage Creek	1/02/2012			2502	3.62					<5		4.2	1,540,000					1.46	143	16700	18000	834	4.71	239	39600	13500	0.9	813	590
DOCC	Dyson's Open Cut Seepage Creek	29/02/2012			3076	3.7																								
DOCC	Dyson's Open Cut Seepage Creek	28/03/2012			2972	3.74																								
DOCC	Dyson's Open Cut Seepage Creek	24/04/2012			3909	4.02					5		6.6	2,730,000				22200	2.38	257	27800	31600	102	5.42	435	63,800	22200	1.2	1680	982
DOCC	Dyson's Open Cut Seepage Creek	31/01/2019			2155.9	4.12		<1		3.7		4.2	5.4	1,130,000	1700	2	1080	7800	0.72	121	10,100	9940	176	3.09	188	24,900	7840	1.4	524	319
No. of samples			0.0	0.0	11.0	11.0	0.0	1.0	0.0	1.0	8.0	2.0	8.0	9	1.0	1.0	1.0	7.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	9.0	9.0
Minimum			0.0	0.0	2155.9	3.4	0.0	0.0	0.0	3.7	5.0	3.3	3.8	1,130,000	1700.0	2.0	1080.0	55.0	0.2	121.0	13.0	1.4	102.0	3.1	100.0	24900.0	11.0	0.9	10.0	8.0
Maximum			0.0	0.0	4549.0	4.1	0.0	0.0	0.0	3.7	5.0	4.2	7.5	3,450,000	1700.0	2.0	1080.0	38000.0	5.0	293.0	36200.0	47300.0	11300.0	9.6	566.0	75200.0	28000.0	1.7	2020.0	1290.0
Mean					3236.6	3.7				3.7	5.0	3.8	5.3	2,207,778	1700.0	2.0	1080.0	20271.4	2.2	202.7	22322.2	27437.8	4047.0	5.9	352.0	49333.3	17960.0	1.3	1262.7	807.8
Standard Deviation					826.5	0.2					0.0	0.6	1.3	825,648				9990.8	1.2	70.4	8435.9	10967.9	5209.3	1.9	139.6	17539.0	6504.1	0.3	498.9	307.1
80th Percentile					4041.0	3.8				3.7	5.0	4.0	6.3	2,960,000	1700.0	2.0	1080.0	25560.0	2.7	272.6	29720.0	33240.0	9832.0	7.0	476.0	67240.0	23600.0	1.5	1688.0	1057.2
DOCD	Dyson's backfilled Open Cut Drain	10/08/2010			4650	5.6					5		4.2	4,030,000				329	2.4	476	48400	2770	82000	<0.2	653	122000	33500	4.6	98.7	984
DOCD	Dyson's backfilled Open Cut Drain	31/01/2019			314.7	4.3		<1		1		4.5	0.6	52,300	110	<1	33.4	1,650	0.16	3.6	488	7230	12	0.84	5.9	1930	594	0.2	7.21	76.9
No. of samples			0.0	0.0	2.0	2.0	0.0	1.0	0.0	1.0	1.0	1.0	2.0	2	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum			0.0	0.0	314.7	4.3	0.0	0.0	0.0	1.0	5.0	4.5	0.6	52,300	110.0	0.0	33.4	55.0	0.2	3.6	13.0	1.4	12.0	0.8	5.9	1930.0	11.0	0.2	7.2	8.0
Maximum			0.0	0.0	4650.0	5.6	0.0	0.0	0.0	1.0	5.0	4.5	4.2	4,030,000	110.0	0.0	33.4	1650.0	2.4	476.0	48400.0	7230.0	82000.0	0.8	653.0	122000.0	33500.0	4.6	98.7	984.0
Mean					2482.4	5.0				1.0	5.0	4.5	2.4	2,041,150	110.0		33.4	989.5	1.3	239.8	24444.0	5000.0	41006.0	0.8	329.5	61965.0	17047.0	2.4	53.0	530.5
Standard Deviation					3065.5	0.9							2.5	2,812,659				934.1	1.6	334.0	33878.9	3153.7	57974.3		457.6	84902.3	23268.1	3.1	64.7	641.4
80th Percentile					3782.9	5.3				1.0	5.0	4.5	3.5	3,234,460	110.0		33.4	1385.8	2.0	381.5	38817.6	6338.0	65602.4	0.8	523.6	97986.0	26918.8	3.7	80.4	802.6
DOHC	Dyson's Overburden Heap Seepage Creek	16/03/2011			1106	4.31					<5		2.8	579,000				9020	0.52	73.3	3100	4630	2740	2.38	81.2	7380	2590	0.4	155	134
DOHC	Dyson's Overburden Heap Seepage Creek	13/04/2011			1356	4.17					<5	4.1	3.1	766,000				14,900	0.66	92.8	4110	5040	1880	22.8	104	9770	3380	0.5	224	231
DOHC	Dyson's Overburden Heap Seepage Creek	10/05/2011			1579	4.18					<5		3.6	1,020,000				11,800	0.84	133	6340	3800	560	5.08	144	14,900	4930	0.9	217	257
DOHC	Dyson's Overburden Heap Seepage Creek	6/06/2011			1968	4.32					<5		5	1,400,000				9100	1	190	9710	2740	<800	1.3	206	23,300	7420	1.2	175	311
DOHC	Dyson's Overburden Heap Seepage Creek	5/07/2011			1986	4.39					<5		5.7	1,430,000				4800	0.58	194	8110	936	240	0.85	216	21,400	6280	1.4	104	202
DOHC	Dyson's Overburden Heap Seepage Creek	21/12/2011			759	4.44					<5			332,000					0.28	40.3	1350	3980	854	0.65	50.4	4860	1320		55.9	139
DOHC	Dyson's Overburden Heap Seepage Creek	1/02/2012			657	4.67					<5		2.3	324,000					0.16	44	637	924	690	0.81	50.4	2410	633	0.2	76.2	61.7
DOHC	Dyson's Overburden Heap Seepage Creek	29/02/2012			1658	4.28																								
DOHC	Dyson's Overburden Heap Seepage Creek	28/03/2012			1273	4.22																								
DOHC	Dyson's Overburden Heap Seepage Creek	24/04/2012			1747	4.33					<5		4	984,000				9270	0.62	128	6160	1370	574	1.22	145	15,600	4620	1.4	184	195
DOHC	Dyson's Overburden Heap Seepage Creek	21/05/2012			2103	4.22					<5	4.22	5.4	1,440,000				7380	0.76	192	10,700	1080	472	1.2	212	26,500	8030	1.1	154	262
DOHC	Dyson's Overburden Heap Seepage Creek	31/01/2019			776.45	4.4		<1		1.2		4.7	2.4	276,000	480	1	271	4270	0.16	36.4	410	2060	862	1.12	43.8	1740	461	0.5	87.3	57.1
No. of samples			0.0	0.0	12.0	12.0	0.0	1.0	0.0	1.0	9.0	3.0	9.0	10	1.0	1.0	1.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0
Minimum			0.0	0.0	657.0	4.2	0.0	0.0	0.0	1.2	0.0	4.1	2.3	276,000	480.0	1.0	271.0	55.0	0.2	36.4	13.0	1.4	200.0	0.7	43.8	1740.0	11.0	0.2	10.0	8.0
Maximum			0.0	0.0	2103.0	4.7	0.0	0.0	0.0	1.2	0.0	4.7	5.7	1,440,000	480.0	1.0	271.0	14900.0	1.0	194.0	10700.0	5040.0	2740.0	22.8	216.0	26500.0	8030.0	1.4	224.0	311.0
Mean					1414.0	4.3				1.2		4.3	3.8	855,100	480.0	1.0	271.0	8817.5	0.6	112.4	5062.7	2656.0	985.8	3.7	125.3	12786.0	3966.4	0.8	143.2	185.0
Standard Deviation					507.5	0.1						0.3	1.3	470,055				3486.8	0.3	64.3	3730.9	1602.1	803.7	6.8	69.3	8919.5	2744.5	0.5	59.3	85.5
80th Percentile					1923.8	4.4				1.2		4.5	5.2	1,406,000	480.0	1.0	271.0	10788.0	0.8	190.4	8430.0	4110.0	1269.2	2.9	207.2	21780.0	6508.0	1.3	190.6	258.0
EB@G_Dys	East Branch Finniss River at Gauge Station	15/04/2009			378.5	6.39								122,000				15	<0.2	9.5	117	18.1	<200	<0.1	24.5	1120	113		1.89	10
EB@G_Dys	East Branch Finniss River at Gauge Station	7/06/2011			765	3.97																								
EB@G_Dys	East Branch Finniss River at Gauge Station	31/01/2013			133.3	7.18	13		15.86		<5		4.3	28,500		6		145	<0.02	3.5	49.9	44.2	186	0.1	6.6	201	44.5	1	2.82	3.7
EB@G_Dys	East Branch Finniss River at Gauge Station	27/02/2013		14.4	107.5	6.09	20		24.4		<5		4.9	24,400		4		54	0.02	3.4	38.1	20.9	170	0.09	6.5	168	33.3	0.4	2.38	2.4
EB@G_Dys	East Branch Finniss River at Gauge Station	24/04/2013		4.64	139.3	7.48	20		24.4		<5		4.6	36,100		3		21.1	<0.02	4.1	47.9	5.14	60	<0.01	8.8	282	42.7	0.4	2.8	2.9

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@G_Dys	East Branch Finniss River at Gauge Station	23/05/2013		5.25	258.2	7.18	20		24.4		<5		5.7	78,300		4		25.7	0.04	8.1	167	14.3	172	<0.01	16.4	969	133	1.1	2.29	9.4
EB@G_Dys	East Branch Finniss River at Gauge Station	18/06/2013		4.4	228.2	6.65	19.6		18		<5		5.7	79,800		3		11.8	0.04	7.9	174	12.1	446	0.13	17	838	140	0.3	2.24	7.9
EB@G_Dys	East Branch Finniss River at Gauge Station	4/12/2013		1.68	603	5.13			<1		<5		4.8	239,000		4		894	0.24	22.9	825	729	478	0.15	42.1	2800	652	2.6	28.8	61.7
EB@G_Dys	East Branch Finniss River at Gauge Station	8/01/2014		16	237.9	6.6	24.6		26		<5		5.6	76,900		4		10	0.02	8.5	174	9.34	408	<0.01	16.8	1260	120	0.6	1.97	8.5
EB@G_Dys	East Branch Finniss River at Gauge Station	5/02/2014		9.49	167.7	5.45	2.6		3.172		<5		2.2	79,100		3		549	0.06	8.8	213	309	238	0.06	13.2	574	195	0.5	19.6	13.8
EB@G_Dys	East Branch Finniss River at Gauge Station	5/03/2014		4.91	165.3	7.96	17.8		16		<5		4.7	42,100		3		35	0.26	4.4	44	23.8	50	0.28	10.2	210	39.2	0.4	3.43	3.9
EB@G_Dys	East Branch Finniss River at Gauge Station	2/04/2014		6.4	176.2	8.06	28.8		35.136		<5		5.1	45,900		2		13.7	<0.02	5.9	74.7	8.97	86	<0.01	12.1	360	62.8	0.8	2.13	3.4
EB@G_Dys	East Branch Finniss River at Gauge Station	29/04/2014		11.5	339	7.79	30.6		28		<5		6.9	104,000		3		11.7	0.02	10.5	129	18.3	84	<0.01	23.5	940	105	2	2.46	5.3
EB@G_Dys	East Branch Finniss River at Gauge Station	7/01/2015		16.67	183.1	5.54	8		7		<5		4.8	64,000				108	0.04	7.2	142	124	168	0.06	11.8	457	125	1.6	5.75	13.7
EB@G_Dys	East Branch Finniss River at Gauge Station	4/02/2015		5.53	118.3	6.18	18.4		16		<5		4.6	24,900		3		43.6	0.02	3.4	38.4	12	168	0.04	6.4	179	33.1	0.4	2.37	3.8
EB@G_Dys	East Branch Finniss River at Gauge Station	5/03/2015		4.62	109.9	6.32	17.6		15		<5		4.3	21,300		4		72.5	<0.02	3.1	32.3	17.1	156	0.04	5.8	123	28.7	0.4	2.67	3.4
EB@G_Dys	East Branch Finniss River at Gauge Station	31/03/2015		3.45	97.8	7.12	20.6		21		<5		4.8	18,400		3		85.6	<0.02	2.9	19.3	7.12	248	0.07	5.7	107	17.4	0.4	1.58	3.7
EB@G_Dys	East Branch Finniss River at Gauge Station	28/04/2015		5.52	385.7	6.4	22.2		13		<5		6.9	140,000		3		7.4	0.04	11.2	89.4	8.82	548	<0.01	28.8	1600	65.1	1.1	0.647	4.9
EB@G_Dys	East Branch Finniss River at Gauge Station	6/01/2016		7.58	139.9	6.73	11.6		10		<5		4.2	46,700		6		833	0.02	5.3	60	37.1	874	0.24	9.8	374	53.6	1.3	12.1	5.9
EB@G_Dys	East Branch Finniss River at Gauge Station	4/02/2016		4.85	104.3	6.7	20		15		1.2		4.1	20,400		4		43.2	<0.02	3.3	47.7	24.8	110	0.04	5.6	173	39.5	0.4	2.95	3.3
EB@G_Dys	East Branch Finniss River at Gauge Station	3/03/2016		4.72	120.7	6.97	22.6		21		<5		4.2	26,000		2		37.4	<0.02	3.8	35.3	6.68	146	0.03	7.1	231	31.1	0.3	1.74	4
EB@G_Dys	East Branch Finniss River at Gauge Station	30/03/2016		4.52	123.9	5.92	25.6		22		<5		5.1	32,800		4		46.2	<0.02	4.6	43.6	14.1	156	0.03	8.8	208	38.9	0.6	2.32	2.7
EB@G_Dys	East Branch Finniss River at Gauge Station	1/02/2017	12.4		83.3	7.59				1.2		7.2	3.6	18,300		4		76.2	<0.02	2.8	28.8	18	106	0.05	4.8	118	26.4	0.4	2.98	4.7
EB@G_Dys	East Branch Finniss River at Gauge Station	28/02/2017			125.7	6.91				1.2		6.8	4	34,600			44.5	65.5	<0.02	4	38.6	28.3	222	0.38	8.3	243	35.9	0.4	4	14.1
EB@G_Dys	East Branch Finniss River at Gauge Station	27/03/2017			101.3	5.88		12		1.3		6.9	3.8	25,900			33	51.9	<0.02	3.2	40.9	21.6	198	0.05	6.1	149	36.4	0.4	3.67	7
EB@G_Dys	East Branch Finniss River at Gauge Station	24/04/2017			114.69	6.57		20		1.3		7.2	4.5	26,700			37.1	40.3	<0.02	3.3	29.9	11	160	0.09	7	183	28.3	0.5	2.53	4.1
EB@G_Dys	East Branch Finniss River at Gauge Station	28/02/2018	11.6		91.44	6.27		14		1.1		7.3	3.8	32,500		2.6	41.8	54.6	0.02	3.9	35	16.1	68	0.04	7.8	161	35.4	0.5	4.99	4.5
EB@G_Dys	East Branch Finniss River at Gauge Station	31/01/2019			97.07	6.24		5		0.9		6.9	1.6	24,800	70	3	29.5	105	<0.02	3.5	56	42.3	84	0.1	5.1	178	46.3	1.1	2.67	4.3
EB@G_Dys	East Branch Finniss River at Gauge Station	7/02/2019			120.19	5.95		16		1.7		7.5	4.6	23,200	70	3	34.9	141	<0.02	3.7	44.9	31	196	0.13	6.3	181	38.5	0.8	3.07	5.8
EB@G_Dys	East Branch Finniss River at Gauge Station	20/03/2019			105.28	6.39		13		<2		7	4.3	24,900	70	5	35.2	48.3	<0.02	3.2	36.8	31.9	92	0.04	6.6	157	32.9	0.9	2.5	3.9
EB@G_Dys	East Branch Finniss River at Gauge Station	9/04/2019			123.4	6.95		21		<2		7.1	4.3	24,100	60	3	35.9	79.8	0.02	3.3	29.1	17.4	132	0.06	6.7	122	26.5	0.6	2.3	5.6
EB@G_Dys	East Branch Finniss River at Gauge Station	9/05/2019			102.36	6.86		21		<2		7.4	5.5	22,200	80	4	34.6	51.4	<0.02	3.2	26.8	8.31	92	0.03	6.5	134	24.1	0.7	1.32	4
No. of samples			2.0	19.0	33.0	33.0	19.0	8.0	20.0	10.0	19.0	10.0	30.0	30	5.0	27.0	9.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Minimum			11.6	1.7	83.3	4.0	2.6	5.0	3.2	0.9	1.2	6.8	1.6	18,300	60.0	2.0	29.5	7.4	0.0	2.8	19.3	5.1	50.0	0.0	4.8	107.0	17.4	0.3	0.6	2.4
Maximum			12.4	16.7	765.0	8.1	30.6	21.0	146.3	1.7	1.2	7.5	6.9	239,000	80.0	6.0	44.5	894.0	0.3	22.9	825.0	729.0	874.0	0.3	42.1	2800.0	652.0	2.6	28.8	61.7
Mean			12.0	7.2	194.2	6.5	19.1	15.3	25.1	1.2	1.2	7.1	4.6	51,848	70.0	3.6	36.3	121.8	0.1	5.7	94.4	54.0	210.1	0.1	11.4	477.4	78.8	0.8	4.4	7.6
Standard Deviation			0.6	4.4	155.5	0.9	6.7	5.5	29.5	0.2		0.2	1.1	47,253	7.1	1.0	4.5	220.1	0.1	4.1	145.6	137.1	177.6	0.1	8.4	582.0	115.0	0.5	5.8	10.6
80th Percentile			12.2	10.3	237.9	7.2	23.4	20.6	24.7	1.3	1.2	7.3	5.2	78,300	72.0	4.0	39.0	105.0	0.0	8.1	129.0	31.9	240.0	0.1	16.4	838.0	113.0	1.1	3.7	8.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	31/01/2013			265.9	7.04	19.4		23.66		<5		4.1	82,300		4		16.3	0.1	8.3	16.6	28.9	38	0.06	19.5	87.5	39.6	1	1.97	34.8
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	26/02/2013		11	192	5.94	21		25.62		<5		4	55,800		4		23	0.12	5.9	24.2	21.4	58	0.08	13.6	138	33.3	0.6	1.87	31.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	26/03/2013		3.36	201.5	6.08	24.6		24		<5		4	56,800		4		23	0.12	6.3	20.2	16.5	52	0.05	13.8	83	34	0.5	1.68	31.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	23/04/2013		2.13	213.6	7.27	25		30.5		<5		3.9	76,800		2		19.1	0.16	9.2	45.6	17.4	18	0.04	18	176	57.2	0.5	2	62.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	22/05/2013		4.85	368.8	6.33	28		34.16		<5		4.8	127,000		3		29.7	0.16	13.5	24.5	18.7	10	<0.01	28.7	296	58.3	1.6	1.89	53.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	17/06/2013		1.89	296.7	6.66	33.6		34		<5		4.7	115,000		2		18.3	0.12	13.2	18.5	10.7	12	<0.01	27.4	99.6	52	0.6	2.49	47.2
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	15/07/2013		2.44	407.5	7.08	50		53		<5		6	167,000		3		1.2	<0.02	19.9	86.8	1.53	92	<0.01	39.5	1310	37.7	1.3	1.83	12.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	3/12/2013		11.33	638	6.95	19		20		<5		4.6	291,000		4		8.6	0.56	30.8	121	15.9	6	0.04	59.2	262	211	1.6	0.809	281
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	7/01/2014		4.75	324.9	6.03	21.7		24		<5		4.4	119,000		3		10.4	0.14	12.2	24.7	14.6	12	<0.01	26.4	191	47	0.6	1.83	47.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	4/02/2014		10.33	74.5	6.92	12.8		8		<5		2.4	20,500		3		103	0.04	3.1	19.4	37.4	102	1.35	4.7	116	19.7	0.6	1.77	25.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	4/03/2014		2.75	241.4	8.26	27.2		26		<5		3.6	68,300		3		32.1	0.22	9.3	69	37.2	12	0.07	16.3	222	63.9	0.5	3.06	76.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	1/04/2014		3.69	416.3	7.9	42.8		52.216		<5		4.5	140,000		2		18	0.32	18.1	91.6	18.2	8	<0.01	33.5	385	97.3	0.7	4.62	105
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	28/04/2014		2.53	640	7.92	61.6		56		<5		5.9	230,000		2		5.7	0.2	27.9	11.9	9.09	<2	<0.01	54.1	160	52.9	0.9	5.95	35.3
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	26/05/2014		1.48	845	6.65	28.2		34.4		5		8.3	387,000		3		7.9	0.1	44	8.43	10.4	6	0.02	86.6	130	29.4	1.3	6.73	25.6
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	23/06/2014		2.07	751	6.52																								
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	18/08/2014		2.71	1407	6.56					10		16.4	850,000		3		1.6	0.14		6.7	9.82	<2	0.02	178	47	63.3	1.2	19.8	57.7
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	6/01/2015		14.79	190.5	6.52	13.85		13		<5		4.6	70,600				63.3	0.12	8	42.1	32	64	0.49	14.8	273	44.2	1.2	1.79	52.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	3/02/2015		2.94	143.2	69.89	21.6		32		<5		3.5	48,800		3		37	0.12	5.8	33.4	22.9	54	0.07	11.6	157	40	0.7	1.86	41.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	4/03/2015		2.94	162.6	7.06	20.8		17		<5		3.3	40,800		4		71.1	0.08	5.7	28.8	29.2	66	0.09	10	156	31.9	0.6	1.71	33.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	1/04/2015		3.21	203.5	7.15	27.8		29		<5		3.8	52,700		3		61.9	0.1	8	31.4	11.9	24	0.04	14	190	37.4	0.3	1.61	39.8
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	29/04/2015		3.85	428.2	7.07	52		53		<5		5.2	117,000		3		10.7	0.06	17.6	1.08	8.39	10	0.01	30	38.8	21.7	0.7	2.66	14.7
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	5/01/2016		4.24	177.5	7.39	12.6		12		<5		3.2	58,000		4		29.1	0.16	6.5	57.9	37.7	32	0.04	12.1	268	50.2	1.1	1.99	52.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	3/02/2016		2.98	147.5	6.96	18.6		14		1.8		3.2	46,000		3		21.7	0.1	5.9	34	30.4	46	0.07	11.1	163	36.5	0.7	1.77	38.6
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	1/03/2016		2.26	222.5	7.25	34		24		<5		3.4	66,000		2		23.4	0.14	8.6	40.6	16.2	18	0.03	15.7	197	47.7	0.6	1.83	50.1
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	29/03/2016		2.31	202.6	5.35	29.8		23		<5		3.4	55,600		3		24.1	0.1	7.4	25.4	16.8	26	0.04	14	129	34	0.6	1.95	32.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	26/04/2016		2.61	452	7.34	40		43		<5		5.2	166,000		4		4.7	0.06	20.7	3.68	8.31	8	<0.01	38	94.7	27.4	0.8	2.29	17.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	23/05/2016		5.17	345	7.22	42		46		<5		5.4	120,000		4		12.8	0.04	16.2	1.63	9.27	8	0.06	30.5	239	22.6	1.7	1.65	10.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	31/01/2017	18.2		156.9	6.89							3.1	40,100		4		49.3	0.1	5.2	27.3	38.7	94	0.12	9.4	147	33.9	0.6	1.83	33.2
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	27/02/2019			193.03	5.61				1.9		7.3	3.4	62,200			83.6	67.8	0.16	8.7	54.7	36.5	24	0.04	15	213	56.8	0.6	2.72	60.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	5/04/2017		4.18	173.15	7.38		22		1.7		7.2	3.3	44,400			62	44	0.12	6.3	41.7	31.4	34	0.09	11.1	143	44.5	0.5	2.05	55.9
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	26/04/2017			270.33	7.47		30		2.3		7.6	4.1	82,400			106	48.4	0.2	10.6	54.9	17	12	0.06	19.3	248	63.9	0.6	2.89	84.2
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	30/05/2017			662.53	7.03		65		5.2		7.6	6.4	242,000		2.7	306			31.2					55.4			1.2		
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	20/06/2017			730.03	7.47		68		6.6		7.5	6.8	245,000		2.9	321	3.9	0.06	32.3	7.57	10.1	6	<0.01	58.2	178	19.4	1.4	6.21	19.4
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	2/03/2018	24.6		200.87	6.99		23		1.8		7.6	3	53,100		2	73.4	44.8	0.12	7.7	45.7	39.2	28	0.05	13.2	184	46.9	0.6	3.01	47.8
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	27/04/2018	42		249.32	7.34		41		2.5		7.4	3.9	95,200		2.4	134	63.9	0.12	12.9	21.9	15.1	24	0.02	24.7	128	46.7	0.7	3.6	49.1
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	17/07/2018								7.8			7	238,000	450	6.4	317	20.9	<0.02	31.6	7	2.62	6	0.01	57.8	173	12.5	2.1	6.75	11.5
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	14/08/2018			91.79	6.88		84		7.8		7.7	7.9	233,000	400	8	325	18.6	<0.02	32.8	3.09	9.66	4	0.02	59	104	11.7	2.4	7.23	8.7
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	19/03/2019			483.08	6.4		17		2		7.3	4.2	192,000	310	3	222	25.1	0.32	20.3	33.8	10.9	6	0.04	41.6	235	113	1.2	1.07	167
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	9/04/2019			200.5	6.85		21		<2		7.1	3.6	57,000	110	2	74.5	47.5	0.1	6.7	18.5	18.7	34	0.05	14	125	32.7	0.9	1.92	35.8

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0			10.00	500					20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@GS097	East Branch Finniss River at Gauge Station 8150 097	9/05/2019			271.97	6.55		27		2		7.5	4.7	92,000	180	5	119	40.4	0.08	12.3	11.9	11.2	8	0.03	21.4	186	30.7	1	1.71	32.8
No. of samples			3.0	27.0	39.0	39.0	25.0	10.0	25.0	12.0	26.0	11.0	39.0	39	5.0	35.0	12.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	39.0	38.0	38.0	39.0	38.0	38.0
Minimum			18.2	1.5	74.5	5.4	12.6	17.0	8.0	1.7	1.8	7.1	2.4	20,500	110.0	2.0	62.0	1.2	0.0	3.1	1.1	1.5	4.0	0.0	4.7	38.8	11.7	0.3	0.8	8.7
Maximum			42.0	14.8	1407.0	69.9	61.6	84.0	56.0	7.8	10.0	7.7	16.4	850,000	450.0	8.0	325.0	103.0	0.6	44.0	121.0	39.2	102.0	1.4	178.0	1310.0	211.0	2.4	19.8	281.0
Mean			28.3	4.4	349.8	8.5	29.1	39.8	30.1	3.8	5.6	7.4	4.8	136,010	290.0	3.3	178.6	30.3	0.1	14.5	32.0	19.3	29.5	0.1	31.3	201.9	47.4	0.9	3.2	50.5
Standard Deviation			12.3	3.4	261.5	10.1	12.8	23.8	13.8	2.5	4.1	0.2	2.3	144,012	143.7	1.3	110.5	23.2	0.1	10.2	26.6	10.9	27.1	0.2	30.6	197.8	34.0	0.5	3.2	48.1
80th Percentile			35.0	4.8	464.4	7.4	40.4	65.6	43.6	6.6	8.0	7.6	5.6	207,200	410.0	4.0	314.8	48.0	0.2	20.5	45.7	31.0	52.0	0.1	46.6	237.4	57.0	1.2	3.4	57.0
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	30/10/2008			1834	6.89			18.285		10		16.6	969,000				50	7.4	91.6	2820	485	<200	1.5	187	5490	2330	3	30.7	4550
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	15/04/2009			938	6.56			170.66					408,000				27	2.2	32.2	880	297	<200	0.2	80.4	1810	736		8.86	1250
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	6/08/2010			570	8					10	6.34	7.6	209,000				4	<0.2	26	3.5	16.7	<200	<0.1	51.3	61	14.3	2.3	4.34	17
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	21/05/2012			670	7.13	77		93.94		<5	7.13	28	342,000				25.6	1.68	32.5	660	141	52	0.49	72.7	1,250	574	0.8	5.96	948
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	31/01/2013			263.6	7.18	17		20.74		<5		4.4	86,400		5		38.7	0.2	7.9	118	48.3	80	0.05	19.3	519	91.4	1.1	3.73	71.3
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	27/02/2013		8.59	148.3	5.88	17		20.74		<5		3.5	47,700		3		45.9	0.16	4.2	43.1	32.4	98	0.12	12.2	134	39.7	0.5	2.84	49.3
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	27/03/2013		12.4	123.4	6.3	21.6		21		<5		6.4	30,200		4		36.8	0.08	3.2	20.5	22.7	70	0.11	7.4	69.2	20.3	0.9	1.76	19.6
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	24/04/2013		3.29	237.6	7.05	24		29.28		<5		3.7	83,100		3		40	0.32	7.7	121	38.4	22	0.04	19.6	304	105	0.5	3.86	159
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	23/05/2013		5.28	453.1	7.08	32		39.04		<5		4.6	167,000		3		51.5	0.72	15.1	294	63.9	6	<0.01	38.4	742	249	1	6.15	368
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	18/06/2013		4.29	342.6	6.96	31.6		32		<5		4.3	135,000		2		28.4	0.8	12.8	307	56.9	12	<0.01	31.6	585	262	0.5	3.29	443
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	16/07/2013		1.63	1428	6.97	48.4		48		<5		8.2	850,000		1		20.2	6.78	76	2,370	535	4	0.11	171	4,080	2070	1	18.9	3930
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	19/08/2013		1.4	1882	6.78	65.8		67		<5		9.5	1,030,000		3		42.9	8.6	96.3	3090	651	4	1.23	216	4590	2990	1.1	28.4	4960
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	9/09/2013		3.32	2285	6.58	37.4		38		5		9.7	1,410,000		2		30.9	11.6	118	3880	513	<10	0.26	274	5430	3830	1.7	15.4	7160
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	7/10/2013		2.84	2585	5.75	16.4		13		5		10	1,790,000		2		23.7	14	143	5980	555	10	0.24	352	8470	4970	1.9	6.42	10800
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	5/11/2013		4.53	2032	5.48	3.4		6		5		8.7	1,290,000				44.7	12.6	108	4120	606	10	1.52	255	7070	3810	2	6.85	8920
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	4/12/2013		16.7	672	7	34		27		<5		4.1	264,000		5		48.5	1.12	23.1	400	132	16	0.05	57.8	1100	314	2	11.4	397
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	8/01/2014		7.63	333.6	7.08	4.5		21		<5		4.2	139,000		3		35.1	0.54	11.9	188	70.6	12	<0.01	30.6	584	161	0.6	5.02	240
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	5/02/2014		11.47	144.3	6.81	9.8		11.956		<5		2.6	50,300		3		33.2	0.18	5.9	50.3	65.6	38	0.42	10.5	203	46.2	0.6	3.56	50.7
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	5/03/2014		4.33	226.2	8.2	16.8		16		<5		3.4	73,500		3		67.6	0.3	7	86.8	69.6	100	0.3	17	231	74	0.6	4.38	100
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	2/04/2014		5.4	388.8	7.62	29.8		36.356		<5		4.4	160,000		2		36.9	0.8	15.1	249	61.1	12	0.02	36.7	695	219	0.7	5.97	334
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	29/04/2014		5.84	1133	7.43	41.4		41		<5		6.3	545,000		2		61.7	3.06	46.3	900	208	10	0.01	116	2090	746	1.2	9.07	1340
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	25/05/2014		7.12	1121	6.26	42		43		<5		8.4	590,000		2		25.3	3.9	52.1	1420	222	10	0.13	125	2710	1180	1.6	11	2460
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	28/05/2014		2.59	1224	6.87	47.2		57.584		<5		8.7	604,000				20.3	4.82	58	1650	317	<2	0.02	129	2850	1520	1.2	14.9	2920
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	24/06/2014		2.29	1487	6.41	88		85		15		10.6	899,000		2		41.8	8.14	86.2	2990	723	2	0.63	191	4480	2880	1.1	30.4	5740
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	23/07/2014		2.31	1325	6.95	116		111		<5		12	821,000		2		52	8.46	85.8	2930	629	<2	0.68	178	4290	2770	0.8	25.8	6060
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	19/08/2014		1.96	1772	6.84	88		102		<5		11.9	979,000		2		54.1	10.6	97.7	3690	791	4	0.25	210	5440	3360	0.9	24.7	7530
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	17/09/2014		4.14	2304	6.42	43		65		<5		11.4	1,470,000		2		143	17.6	126	6040	1850	<10	1.26	307	9590	5580	1.3	32.4	12500
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	7/01/2015		9.75	252.7	6.73	20.4		23		<5		6.6	86,300				81.5	0.22	8.9	67.7	61.9	52	0.73	19.1	316	60.1	1.1	3.66	72.1
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	4/02/2015		3.43	172.9	6.06	11		16		<5		3.3	48,300		3		53	0.14	4.7	59	40.5	72	0.11	11.9	204	51.5	0.7	2.94	70.4
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	5/03/2015		7.65	132.4	6.12	17		14		<5		3	34,800		4		80.5	0.1	3.9	37.5	41.1	70	0.11	9	157	35.4	0.6	2.33	39.8
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	31/03/2015		3.43	185	7.12	23		22		<5		3.8	55,900		3		107	0.18	5.8	66.4	40.4	40	0.08	14.3	220	61.5	0.4	3.26	78.7
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	28/04/2015		1.92	962	7.03	40		31		<5		6	415,000		2		19.3	2.6	36	958	147	4	0.01	89	2460	790	0.9	5.36	1480
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	26/05/2015		9.3	2005	6.11	26.4		24		<5		7.7	1,070,000		2		40.5	8.14	92.1	3260	654	28	0.25	215	5880	2900	1.2	14.6	5210
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	1/07/2015		1.24	1949.7	6.77	78		61		2.9		10.7	1,020,000		2		36.5	7.9	90	3030	558	<2	0.29	209	4290	2960	1	23	5600
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	23/07/2015		2.31	2076	6.58	80		79		<5		12.6	1,020,000		2		40.7	8.52	94.3	3100	401	6	0.12	215	4030	3240	1	17.4	6290
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	18/08/2015		2.08	2034.6	7			24		<5		11.4	1,640,000		1		48.3	12.2	132	4710	638	18	0.21	328	6600	4880	1.1	8.56	10100
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	10/12/2015		7.1	1415.5	6.61	23.4		17		10		14.5	641,000		7		46.7	4.88	71.5	1500	357	6	0.31	114	3470	1240	2.8	8.2	2730
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	6/01/2016		4.88	156.1	7.03	12.6		11		<5		3	54,900		4		47.1	0.2	5.5	68.9	69.5	40	0.07	12.3	285	56.5	1.2	3.35	70.8
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	4/02/2016		3.68	185.1	6.59	18.2		12		1.4		3.1	50,500		3		43.5	0.16	5.2	54.4	63.5	50	0.09	12	220	49.7	0.7	3.19	60.2
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	3/03/2016		3.29	264.5	6.83	24.2		21		<5		3.4	79,700		2		59	0.34	7.8	114	63.5	94	0.15	18.7	387	100	0.5	3.99	147
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	30/03/2016		2.34	184	7.19	35.2		20		<5		3.5	62,900		3		45.2	0.2	6.4	70.2	48.6	50	0.08	15.7	249	66.5	0.6	3.15	87.9
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	27/04/2016		2.96	954.9	671	180		44		<5		7.4	444,000		3		26.2	2.36	41	1020	159	6	0.03	91.2	2650	830	1	7.04	1500
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	24/05/2016		2.84	1083.7	6.71	46		47		<5		8.4	531,000		3		20.6	3.6	50.4	1570	202	8	0.02	112	2990	1260	1.1	10.3	2430
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	21/06/2016		1.88	1898.2	6.86			36		<5		7.9	1,100,000		2		71.5	7.88	91.5	2820	792	26	0.6	222	4910	2760	1.5	15.6	5550
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	20/07/2016		1.6	1849.1	6.78	29.8		29		5		10	920,000		3		70.1	7.58	80.6	3110	1280	14	1.63	186	5940	2780	2.2	18.5	5850
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	18/08/2016		1.89	2334.8	5.34	7.4		2		<5		7	1,370,000				621	10.8	112	4700	1540	136	4.88	267	7430	4380	1.7	28.5	8510
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	31/01/2017	15.2		194.4	7.21							6.3	50,300		3		80.4	0.08	5.6	34.8	52.9	58	0.17	11.5	134	33	0.6	2.35	33.4
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	27/02/2017			172.8	6.94				1.3		7.1	3	55,100			66.1	77.8	0.22	5.5	66.2	63.6	20	0.04	12.7	219	61.2	0.5	3.42	80
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	6/04/2017			143.58	7.42		14		1.4		7.3	3.1	37,400			49.4	98.4	0.14	4.1	43.9	48.9	36	0.11	9.5	134	39.9	0.5	2.9	50.9
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	27/04/2017	21		289.84	7.22		22		1.5		7.4	4	92,400			107	75.2	0.42	8.6	130	50.8	14	0.04	20.8	367	119	0.6	4.51	188
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	31/05/2017			1361.3	5.34		22		3.4		6.7	8.6	820,000		1.7	852	50.1	5.7	67.8	2090	657	70	0.11	166	4750	1890	1.5	17.3	4210
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	21/06/2017			2196.2	6.01		3		3.9		5.7	8.5	1,310,000		1.4	1320	1340	13.6	104	4610	2260	310	7.24	258	8510	3870	1.6	60.8	9490
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	17/07/2017	2.8		2802.1	4.77		<1		3.8		4.9	7.8	1,680,000		1.3	1660	6000	17.8	123	6270	3250	400	16	328	11200	5840	2.1	114	14700
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	16/08/2017	124		3377.2	4.27		<1		4.5		4.5	5.9	2,230,000		1.4	2180	11500	27.6	154	9620	5380	142	25	437	16800	8910	1.9	225	24200
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	13/09/2017			3620.4	4.22		<1		3.4		4.7	5.6	2,330,000		2.1	2290	9240	34.6	156	11000	6770	154	25	461	19400	9860	2.2	361	28300
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	12/10/2017			4680.3	4.19		<1		4.6		4.8	6.9	3,480,000		2.2	3380	14400	43.4	229	16500	10200	306	48.2	683	32200	14100	2.6	572	39200
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	9/11/2017			1982.5	4.17		<1		4.5		4.5	4.2	1,120,000			1090	4240	13	80.7	4300	3240	124	19.9	217	9420	3690	3.2	108	9810
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	7/12/2017			1792.9	4.32		<1		4.5		4.6	8.5	1,060,000			1050	3200	8.9	98.8	3410	2040	114	22.7	194	8520	2800	3	61.6	6310
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	4/01/2018			2027.9	4.24		<1		4.2		4.7	13.1	1,320,000			1320	4520	10.2	150	3730	2190	194	69.6	229	8620	3130	2.6	74.7	6820
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	1/03/2018	16.2		157.74	6.6		13		1.5		7.3	2.7	45,900		2	57.2	53	0.14	5	55.2	55.6	30	0.07	10.9	193	49.6	0.6	3.64	55.3
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	2/01/2019			715.98	6.86		24		6		7.2	10.2	361,000	590	3	391	101	2.28	40.5	776	242	2	0.24	70.4	2070	666	1.5	10.3	1450
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	6/02/2019			189.98	6.34		15		2.1		7.5	3.6	60,800	140	2	76.6	89	0.1	7.4	43.5	42.5	54	0.13	14.1	164	38.3	0.9	2.94	44.8
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	21/03/2019			356.18	6.27		23		2		7.5	4.8	130,000	230	3	154	58.3	0.3	15.3	110	64.1	22	0.08	28.2	425	105	1	4.73	139
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	10/04/2019			159.9	6.91		19		<2		7.2	3.5	64,500	130	2	80.1	66.2	0.16	6.6	50.7	43.4	40	0.08	15.5	188	50.6	0.8	2.98	66
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	10/05/2019			288.68	6.4		23		2		7.5	4.6	95,000	180	3	117	65.3	0.34	9.5	126	48.7	10	0.04	22.7	315	112	0.9	4.27	184

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

Location code	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Disolved)	Alkalinity (Bicarbonate)	Bicarbonate (Disolved)	Chloride	Chloride (Disolved)	pH (Lab)	Sodium (Disolved)	Sulphate (Disolved)	TDS	TOC	Hardness as CaCO3	Aluminium (Disolved)	Cadmium (Disolved)	Calcium (Disolved)	Cobalt (Disolved)	Copper (Disolved)	Iron (Disolved)	Lead (Disolved)	Magnesium (Disolved)	Manganese (Disolved)	Nickel (Disolved)	Potassium (Disolved)	Uranium (Disolved)	Zinc (Disolved)
ADWG 2015 Aesthetic																						1000	300.0		100					3000
ADWG 2015 Health																			2.0			2000		10.00	500		20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																		150	0.8		13	2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																		80	0.4			1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																		55	0.2			1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																		5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500													5000	10.0		1000	400		100.00			1000.00		200	20000
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EB@GS200	East Branch Finniss River Gauge Station at Rum Jungle Bridge	24/07/2019			2353.8	6.37																								
No. of samples			5.0	41.0	65.0	65.0	41.0	17.0	45.0	18.0	45.0	20.0	64.0	65	5.0	51.0	18.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	64.0	65.0	65.0
Minimum			2.8	1.2	123.4	4.2	3.4	3.0	2.0	1.3	1.4	4.5	2.6	30,200	130.0	1.0	49.4	4.0	0.1	3.2	3.5	16.7	2.0	0.0	7.4	60.6	14.3	0.4	1.8	17.0
Maximum			124.0	16.7	4680.3	8.2	180.0	24.0	170.7	6.0	15.0	7.5	28.0	3,480,000	590.0	7.0	3380.0	14400.0	43.4	229.0	16500.0	10200.0	400.0	69.6	683.0	32200.0	14100.0	3.2	572.0	39200.0
Mean			35.8	4.7	1180.2	6.5	39.6	17.8	39.3	3.2	6.9	6.2	7.2	652,752	254.0	2.6	902.2	891.4	6.0	55.4	2132.1	816.3	59.5	4.2	131.5	3864.4	1920.1	1.3	33.0	4377.3
Standard Deviation			49.7	3.4	1020.0	0.9	34.3	6.6	32.7	1.4	4.2	1.2	4.2	695,678	191.9	1.1	977.7	2682.0	8.3	52.4	2967.9	1698.0	80.3	12.0	136.1	5383.5	2643.0	0.7	87.1	7018.0
80th Percentile			41.6	7.1	2028.7	7.1	48.4	23.0	58.3	4.5	10.0	7.3	10.0	1,104,000	302.0	3.0	1524.0	90.9	10.4	97.9	3698.0	736.6	91.2	1.3	218.0	6072.0	3264.0	1.9	26.3	6888.0
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	31/01/2013			293.8	7.18	23		28.06		<5		4.1	97,600		5		39.5	0.24	8.9	78.9	43.8	66	0.08	22.8	286	74.6	1	4.14	86
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	26/02/2013		10.55	161.6	5.87	20		24.4		<5		3.7	54,400		3		36	0.14	5.4	38.9	26.7	76	0.11	13.4	145	38.5	0.6	2.47	44.3
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	26/03/2013		4	177.4	5.99	24.4		23		<5		3.6	46,100		4		35	0.14	5.1	32.1	24.3	80	0.08	12.3	103	34.1	0.5	2.34	44.3
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	23/04/2013		2.79	226.9	7.24	25		30.5		<5		3.9	83,000		3		29.8	0.3	9.6	89.2	34.1	20	0.04	19.2	246	86.9	0.5	2.89	118
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	22/05/2013		6.6	436.9	6.28	30		36.6		<5		5.1	158,000		3		41.9	0.38	16.2	128	27.5	6	<0.01	35	517	132	1.3	4.02	155
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	17/06/2013		3.98	336.6	6.85	32.8		35		<5		5	136,000		2		26.6	0.36	15.2	130	19.4	20	<0.01	31.4	288	141	0.5	3.69	187
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	15/07/2013		1.56	629	7.22	42		56		<5		7.5	315,000		2		1.5	0.24	34.6	10.1	6	<2	<0.01	67.2	90	99.2	0.7	3.71	86.6
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	3/12/2013		15.47	604	6.86	16		13		<5		3.8	279,000		4		29.5	1	24.7	358	58.7	20	0.06	57.8	1120	298	2.3	3.69	357
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	7/01/2014		6.63	351.9	6.23	25		25		<5		4.5	131,000		3		22.3	0.3	13.1	87.8	29.7	12	0.01	28.9	403	93.3	0.7	3.43	118
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	4/02/2014		9.87	75.7	7.39	7.6		9		<5		2.4	20,500		3		103	0.04	3.2	18.4	35.7	100	0.33	4.9	111	19.6	0.6	1.78	16
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	4/03/2014		3.01	231.8	8.4	21.4		21		<5		3.6	73,800		2		37.5	0.28	8.6	87	68	14	0.07	16.5	242	77.8	0.5	3.36	97.4
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	1/04/2014		3.05	452	7.63	33.8		41.23		<5		4.5	164,000		3		23.7	0.56	18.5	181	36.5	8	<0.01	37.1	575	165	0.5	5.35	217
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	28/04/2014		4.32	752	7.5	50.67		48		<5		7	320,000		2		10.3	0.72	34.7	171	12.5	8	<0.01	70.2	625	215	0.9	6.29	261
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	27/05/2014		0.98	1187	6.58	36.6		44.65		5		8.3	623,000				1.9	1.44	60.7	204	16.6	2	0.02	130	520	453	1.4	2.99	632
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	23/06/2014		4.03	1083	6.99	38.6		58		10		11.4	626,000		3		0.6	0.34	67.3	7.56	8.33	<2	<0.01	132	95	132	1.1	9.45	132
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	22/07/2014		4.92	1162	7.52	72		78		10		14.8	786,000		2		0.9	0.22	89	2.01	9.45	<2	<0.01	164	31	105	1	15.7	93.1
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	16/09/2014		8.44		7.67	94		92		10		17.6	923,000		4		2.3	0.12	102	23.2	10.5	2	0.02	196	362	50.7	1.6	23.7	32.8
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	13/10/2014		7.55	1988	7.46	112		98		15		20.4	1,060,000		6		6.2	0.06	117	20.9	10.5	4	0.02	226	431	35.5	2.4	27.7	19.1
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	6/01/2015		11.79	217.6	6.7	16.94		15		<5		5.2	78,500				68.1	0.16	8.5	56.1	42.7	58	0.69	16.5	348	51.8	1.2	2.37	56.5
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	3/02/2015		9.07	152	6.9	20		17		<5		3.5	53,300		3		62.3	0.14	6	53.8	41.8	60	0.14	12.4	205	51.2	0.7	2.44	68.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	3/03/2015		4.2	147.9	7.16	15.4		14		<5		3.2	38,200		6		68.9	0.08	5.3	30.6	39.4	62	0.1	9.4	163	31.5	0.6	1.89	29.1
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	31/03/2015		3.69	214.4	6.59	26.2		25		<5		4	62,300		2		124	0.16	8.1	57.9	40.3	44	0.1	15	215	59.7	0.4	2.28	72.6
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	28/04/2015		4.23	602.4	6.46	44		45		<5		6.4	209,000		3		6.5	0.34	25.5	66.1	11.5	6	<0.01	46.4	415	113	0.6	3.09	117
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	27/05/2015		4.31	1021.5	7.46	54		60		10		10.9	471,000		3		12.6	0.14	55.4	12.2	9.57	4	<0.01	98.9	231	61.9	1.2	6.13	57.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	24/06/2015		2.5	1259.8	7.19	72		69		11.2		13.2	653,000		4		17.1	0.08	76.3	1.91	7.84	<2	<0.01	134	63.6	33.8	1.3	8.39	30.5
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	10/12/2015		38.83	1203.4	6.95	30		21		5		6.6	581,000		7		13.7	2.6	60.4	1090	96.3	8	0.19	111	4310	788	3.9	2.72	1340
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	5/02/2016		3.58	188.3	6.63	16.6		15		1.8		3.3	51,600		3		48.2	0.12	6.2	43.1	53.5	68	0.1	12.4	172	42.4	0.7	2.47	47.8
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	1/03/2016		2.79	224.8	7.49	34		23		<5		3.6	78,200		6		61.7	0.18	9.5	67.8	40.4	50	0.07	17.8	258	64.3	0.5	3.05	69.2
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	30/03/2016		2.4	199.7	6.65	24.4		22		<5		3.9	69,600		3		29.1	0.16	8.6	55.8	33.5	30	0.04	16.6	219	58.3	0.6	2.36	71.6
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	26/04/2016		3.44	505.4	7.33	152		43		<5		6	196,000		4		5.7	0.18	23.8	31.3	7.78	4	<0.01	42.9	287	70.5	0.7	2.86	69.1
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	24/05/2016		3.08	604.6	6.41	46.4		46		<5		7.1	249,000		3		7	0.12	29.4	1.88	10.3	4	<0.01	55.4	101	52.3	1.1	2.84	50.1
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	21/06/2016		4.46	1078.7	6.99	76		80		10		11.3	472,000		4		9.4	0.06	58.6	3.31	5.87	2	<0.01	102	151	24.1	2	11	20.8
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	20/07/2016		2.34	1439.6	7.18	68		80		10		12.3	642,000		4		13.5	0.06	78	16.6	6.56	12	0.01	134	533	54.2	2.1	11.9	34.6
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	30/01/2017	17.6		117.5	7.33			1.5		7.4	3.1		37,300		3		56.8	0.08	4.6	30.8	56.9	50	0.07	8.9	138	32.1		1.92	30.4
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	28/02/2017			204.7	6.9			1.6		7.4	3.3		68,600			83.4	94.9	0.16	8.1	63.8	49.7	30	0.06	15.4	236	60.7	0.5	3.42	60.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	6/04/2017			188.39	7.11		16	1.5		7.4	3.3		52,900			67.4	74.5	0.16	6.36.4	50.5	39.3	18	0.06	12.5	156	48.5	0.6	2.74	57.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	27/04/2017	27.4		303.71	7.25		26	2.1		7.4	4.2		95,900			115	63.9	0.34	11.1	104	37.9	8	0.03	21.2	341	102	0.5	3.52	148
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	30/05/2017			994.71	6.91		52	5.7		7.3	8.1		433,000		2.3	494	6.2	0.38	47.4	66.5	7.26	4	<0.01	91.1	808	161	1.4	3.94	194
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	21/06/2017			1228.1	6.07		69	9.5		7.5	11.5		593,000		2.6	680	6.1	0.1	67.3	36.1	5.06	14	<0.01	124	595	75.9	1.7	8.34	64.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	18/07/2017	50		1080.1	7.5		76	10.5		7.6	13.1		754,000		2.9	864	5.9	0.04	85.9	15.4	5.87	8	0.01	158	387	43.8	1.8	10.6	34.9
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	7/12/2017	33.6		1045	6.27		31	5.3		7.1	6.3		529,000			571	37.4	0.12	57.5	60.5	5.07	26	0.07	104	2060	193	3.7	0.662	184
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	18/07/2018			161.1	7.12			8.8			10.5		579,000	910	4.1	664	16.7	0.1	65.6	4.25	8.61	4	<0.01	121	95.8	42.6	1	12.3	52.7
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	14/08/2018		1.41	1379.6	6.96		81	8.7		7.7	11.6		654,000	1020	6	768	32.6	0.06	76.6	3.12	8.94	4	0.03	140	69.6	25.9	1.2	13.2	30.6
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	12/09/2018			3232	6.93		90	10		7.9	12.3		680,000	1000	4	805	45	<0.1	81.9	15.5	10	12	0.24	146	578	35.8	1.5	18.1	19.8
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	2/01/2019			904.97	7.29		28	8		7.5	8		495,000	790	3	546	59.6	0.84	50.8	321	6.85	<2	0.02	102	1750	464	2	1.46	687
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	19/03/2019			463.72	6.52		16	2		7.4	4.7		180,000	260	3	206	44.9	0.46	17.6	117	32.3	6	0.04	39.5	634	142	1.2	2.42	212
EB@GS327	East Branch Finniss River at Gauge Station 8150 327	9/05/2019			279.85	6.45		26	2		7.5	4.8		97,400	180	4	124	77.3	0.18	11.6	60	18.8	8	0.03	23.1	274	69.1	0.9	2.93	95.4
No. of samples			4.0	34.0	47.0	47.0	33.0	11.0	33.0	14.0	33.0	13.0	47.0	47	6.0	41.0	13.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	46.0	47.0	47.0
Minimum			17.6	1.0	75.7	5.9	7.6	16.0	9.0	1.5	1.8	7.1	2.4	20,500	180.0	2.0	67.4	0.6	0.0	3.2	1.9	5.1	2.0	0.0	4.9	31.0	19.6	0.4	0.7	16.0
Maximum			50.0	38.8	3232.0	8.4	152.0	90.0	98.0	10.5	15.0	7.9	20.4	1,060,000	1020.0	7.0	864.0	124.0	2.6	117.0	1090.0	96.3	100.0	0.7	226.0	4310.0	788.0	3.9	27.7	1340.0
Mean			32.2	6.0	669.4	7.0	42.4	46.5	40.5	5.5	8.9	7.5	7.2	320,217	693.3	3.5	460.6	34.4	0.3	36.5	89.5	25.9	24.8	0.1	68.0	467.7	112.9	1.2	5.9	142.6
Standard Deviation			13.6	6.6	605.1	0.5	31.2	27.9	24.6	3.6	3.6	0.2	4.3	282,036	376.4	1.2	300.1	29.8	0.4	31.7	167.1	20.3	26.4	0.1	58.5	693.8	138.4	0.8	5.8	224.3
80th Percentile			40.2	7.9	1083.0	7.4	62.4	76.0	59.2	9.1	10.0	7.6	11.4	617,000	1000.0	4.0	732.8	61.3	0.4	67.3	101.0	40.4	50.0	0.1	128.8	566.6	139.2	1.6	9.2	178.2
EBusFR	East Branch upstream of the Finniss River Confluence	30/01/2013			307	7.22	36		43.92		<5		7	88,100		5		15	0.06	10.2	10.7	26.7	46	0.06	21.5	80.8	30.9	1.3	2.4	17.9
EBusFR	East Branch upstream of the Finniss River Confluence	11/02/2013		2.21	361.5	7.08																								
EBusFR	East Branch upstream of the Finniss River Confluence	26/02/2013		14.43	189.5	5.97	25		30.5		<5		4	53,900		3		17.2	0.1	6.3	16.7	18.1	46	0.06	14	113	28.5	0.6	1.9	21.9
EBusFR	East Branch upstream of the Finniss River Confluence	11/03/2013		9.8	158.8	7.11																								
EBusFR	East Branch upstream of the Finniss River Confluence	26/03/2013		5.18	193.4	6.33	23.6		26		<5		4	50,600		4		66	0.1	6.2	11.3	25.1	210	0.22	13	62.8	25.4	0.6	1.67	25.3
EBusFR	East Branch upstream of the Finniss River Confluence	8/04/2013		4.74	161.1	6.51																								
EBusFR	East Branch upstream of the Finniss River Confluence	23/04/2013		3	206.7	7.5	31		37.82		<5		4	64,100		3		15.3	0.1	8.9	19.8	10.8	14	0.05	16.5	109	35	0.6	2.05	28.9
EBusFR	East Branch upstream of the Finniss River Confluence	7/05/2013		1.19	431.7	7.11																								
EBusFR	East Branch upstream of the Finniss River Confluence	22/05/2013		2.9	373.9	6.83	42		51.24		<5		4.7	114,000		5		26.3	0.12	14.5	11.4	14.2	12	0.01	28.3	197	40	1.6	2.17	33.2
EBusFR	East Branch upstream of the Finniss River Confluence	3/06/2013		3.46	234.8	7.3																								
EBusFR	East Branch upstream of the Finniss River Confluence	17/06/2013		1.32	301.7	7.08	52		49		<5		5	101,000		2		14.9	0.06	14	4.82	8.57	18	<0.01	27	51.2	28.2	0.5	3.04	17

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EBusFR	East Branch upstream of the Finniss River Confluence	1/07/2013		1.04	373.4	7.67																								
EBusFR	East Branch upstream of the Finniss River Confluence	15/07/2013		1.36	342.3	7.2	94		91		<5		5	89,800		2		1	0.04	18.4	14.9	4.86	8	<0.01	31.1	186	18.5	0.7	7.26	11.8
EBusFR	East Branch upstream of the Finniss River Confluence	3/12/2013		9.9	707	6.61	28		30		<5		6	320,000		4		7.8	0.36	35.4	66.9	36.7	42	1.34	65.4	189	136	1.6	1.31	141
EBusFR	East Branch upstream of the Finniss River Confluence	12/12/2013		10.3	381.3	6.78																								
EBusFR	East Branch upstream of the Finniss River Confluence	7/01/2014		7.09	291.5	7.55	23.5		28		<5		4	95,100		3		8.4	0.06	10.8	9.03	10.7	16	<0.01	22.2	98.9	28.2	0.7	1.68	19.7
EBusFR	East Branch upstream of the Finniss River Confluence	20/01/2014		14.3	158.1	7.14																								
EBusFR	East Branch upstream of the Finniss River Confluence	4/02/2014		8.27	73.9	7.3	7		10		<5		2	18,900		3		33.2	0.06	3.2	15.2	30	68	0.4	4.7	95.5	17.5	0.6	1.5	29.2
EBusFR	East Branch upstream of the Finniss River Confluence	14/02/2014		9.57	152.1	6.9																								
EBusFR	East Branch upstream of the Finniss River Confluence	4/03/2014		4.27	203.9	6.42	30.8		28		<5		4	54,800		2		51.3	0.14	8.1	47.5	41.8	120	0.22	13.9	169	48.2	0.5	2.6	51
EBusFR	East Branch upstream of the Finniss River Confluence	18/03/2014		3.43	218.2	6.67																								
EBusFR	East Branch upstream of the Finniss River Confluence	1/04/2014		4.01	339.8	7.02	41.4		50.508		<5		4	98,400		4		14.1	0.14	14.6	34.6	10.8	12	<0.01	25.7	193	50.9	0.6	3.44	42.5
EBusFR	East Branch upstream of the Finniss River Confluence	28/04/2014		3.35	548	6.9	90		87		<5		5	166,000		3		6.4	0.06	26.5	7.89	8.16	14	0.01	46.1	156	20.6	0.9	8.23	11.2
EBusFR	East Branch upstream of the Finniss River Confluence	14/05/2014		2.69	543	7.32																								
EBusFR	East Branch upstream of the Finniss River Confluence	27/05/2014			607	7.51	96		117.12		5		5	185,000				1.3	0.04	32.2	6.24	6.71	6	0.02	53.7	133	13.2	0.9	14.3	8.4
EBusFR	East Branch upstream of the Finniss River Confluence	10/06/2014		3.41	477.9	7.8																								
EBusFR	East Branch upstream of the Finniss River Confluence	23/06/2014		0.95	392.8	7.57	130		142		<5		4	79,200		2		1.1	<0.02	23.8	10.1	5.71	6	<0.01	38.9	140	11.9	0.7	25.7	7.3
EBusFR	East Branch upstream of the Finniss River Confluence	7/07/2014		10.83	384.6	6.12																								
EBusFR	East Branch upstream of the Finniss River Confluence	22/07/2014		6.33	326.4	7.18	98		103		<5		5	88,200		2		0.9	0.04	20.1	17.7	5.11	2	0.01	34.6	370	24.3	0.7	7.06	13.5
EBusFR	East Branch upstream of the Finniss River Confluence	6/01/2015		13.64	200.2	6.15	16.8		16		<5		5	72,400				44.1	0.14	8.4	45.1	32.8	72	0.5	15.4	270	44.8	1.2	2.03	51.5
EBusFR	East Branch upstream of the Finniss River Confluence	20/01/2015		16.45	160.3	6.63																								
EBusFR	East Branch upstream of the Finniss River Confluence	3/02/2015		7.74	136.2	6.37	19.8		22		<5		4	41,100		3		30.8	0.06	5.5	20.3	18.4	92	0.11	10.6	124	28.5	0.7	1.64	27.6
EBusFR	East Branch upstream of the Finniss River Confluence	17/02/2015		4.02		7.55																								
EBusFR	East Branch upstream of the Finniss River Confluence	4/03/2015		5.91	138.3	6.57	20.6		20		<5		3	33,000		4		50	0.06	5.1	19.8	22.9	76	0.11	8.8	119	24.9	0.6	1.46	23.8
EBusFR	East Branch upstream of the Finniss River Confluence	18/03/2015		4.51	198.9	7.61																								
EBusFR	East Branch upstream of the Finniss River Confluence	1/04/2015		4.65	165.5	6.79	33.4		30		<5		4	36,800		4		70.3	0.06	6.5	15.7	9.63	44	0.06	10.8	108	23.4	0.4	1.25	23
EBusFR	East Branch upstream of the Finniss River Confluence	16/04/2015		5.74	279.8	7.6																								
EBusFR	East Branch upstream of the Finniss River Confluence	29/04/2015		2.2	360.2	7.18	68		83		<5		4	69,000		3		8.6	0.04	16.7	6.47	7.08	18	0.07	25.7	115	12.9	0.7	4.21	10.3
EBusFR	East Branch upstream of the Finniss River Confluence	13/05/2015			413.7	7.38																								
EBusFR	East Branch upstream of the Finniss River Confluence	27/05/2015		2.75	397.4	6.43	108		138		<5		4	41,400		2		15.5	<0.02	22.3	14.7	5.84	10	<0.01	31.8	261	14.3	0.8	17.3	6.9
EBusFR	East Branch upstream of the Finniss River Confluence	10/06/2015		2.35	380.1	7.1																								
EBusFR	East Branch upstream of the Finniss River Confluence	24/06/2015		3.46	330	7.06	132		140		4.4		4	27,700		4		11.4	<0.02	19	13.7	4.68	12	0.01	29.4	171	12.3	0.6	26.2	8.3
EBusFR	East Branch upstream of the Finniss River Confluence	5/01/2016		4.65	168.7	6.83	15.8		15		<5		3	47,400		4		39.5	0.12	6.4	49.9	30.6	80	0.19	11.2	251	43.8	1.2	1.88	48.2
EBusFR	East Branch upstream of the Finniss River Confluence	21/01/2016		10.79	142.6	7.32																								
EBusFR	East Branch upstream of the Finniss River Confluence	3/02/2016		5.74	130.9	6.78	22.4		15		1.8		3	33,900		3		23.1	0.08	5	21.9	21.7	66	0.15	9	115	25.7	0.7	1.5	26.5
EBusFR	East Branch upstream of the Finniss River Confluence	17/02/2016		4.58	121.3	6.86																								
EBusFR	East Branch upstream of the Finniss River Confluence	1/03/2016		3.19	190.2	7.42	28		30		<5		3	47,000		3		13.8	0.08	7.2	19.5	14.7	30	0.04	12.5	118	29.9	0.6	1.53	26.5
EBusFR	East Branch upstream of the Finniss River Confluence	17/03/2016		3.73	208.3	6.92																								
EBusFR	East Branch upstream of the Finniss River Confluence	29/03/2016		4.04	165	6.71	26		25		<5		3	38,500		5		11.3	0.04	5.9	11.4	11.3	36	0.03	11.1	78.3	21.3	0.6	1.38	19.7
EBusFR	East Branch upstream of the Finniss River Confluence	12/04/2016		4.06	229	7.54																								
EBusFR	East Branch upstream of the Finniss River Confluence	26/04/2016		2.5	359.2	6.61	44		76		<5		4	98,400		4		2.8	0.04	18.8	9.23	6.43	10	<0.01	30.3	224	15.9	1	3.97	9.2
EBusFR	East Branch upstream of the Finniss River Confluence	13/05/2016		4.08	484.2	6.22																								
EBusFR	East Branch upstream of the Finniss River Confluence	23/05/2016		2.2	375	6.66	104		107		<5		4	73,600		4		6.7	0.02	20.6	9.5	6.23	10	<0.01	32.6	307	14.1	1	8.95	7.8
EBusFR	East Branch upstream of the Finniss River Confluence	7/06/2016		2.03	394.5	6.87																								
EBusFR	East Branch upstream of the Finniss River Confluence	20/06/2016		2.14	376.9	6.98	130		296		<5		4	33,100		3		8.3	<0.02	19.3	15	4.73	10	<0.01	30.3	253	12.9	0.8	25.5	6.7
EBusFR	East Branch upstream of the Finniss River Confluence	31/01/2017	19.4		137.6	6.15							3	31,100		3		45.4	0.06	4.7	17.9	31.9	106	0.16	8.1	108	25.8	0.7	1.67	24.1
EBusFR	East Branch upstream of the Finniss River Confluence	1/03/2017		3.4	208.2	6.58																								
EBusFR	East Branch upstream of the Finniss River Confluence	27/02/2017		3.4	208.2	6.58				1.8		7.2	3.3	52,400			75.4	113	0.08	7.9	32.3	46.8	216	0.41	13.5	154	40	0.5	2.25	46.8
EBusFR	East Branch upstream of the Finniss River Confluence	14/03/2017		3.68		6.69																								
EBusFR	East Branch upstream of the Finniss River Confluence	4/04/2017		4.24	139.81	7.41		23		1.7		7.4	3	36,000			54.4	45.6	0.1	5.7	26.5	21.7	44	0.08	9.8	104	32.6	0.5	1.81	38.2
EBusFR	East Branch upstream of the Finniss River Confluence	7/04/2017			139.81	7.41																								
EBusFR	East Branch upstream of the Finniss River Confluence	11/04/2017			203.66	5.73																								
EBusFR	East Branch upstream of the Finniss River Confluence	26/04/2017	29.8		245.47	7.58		34		2.2		7.6	4	65,200			92.9	41.7	0.1	9.5	32.2	10.1	14	0.03	16.8	178	45.2	0.6	2.36	44.7
EBusFR	East Branch upstream of the Finniss River Confluence	29/05/2017			472.69	6.29		110		4.6		7.7	5	132,000		2.3	246	11.1	0.04	27.5	11.1	7.99	10	0.18	43	212	17.8	0.8	10.7	12.3
EBusFR	East Branch upstream of the Finniss River Confluence	7/06/2017			380.73	6.56																								
EBusFR	East Branch upstream of the Finniss River Confluence	20/06/2017			499	7.32		151		4.8		7.7	4	68,800		2.3	223	4.5	0.02	26.3	11.2	4.83	6	<0.01	38.1	178	12.2	0.7	20.9	8.7
EBusFR	East Branch upstream of the Finniss River Confluence	4/07/2017			487.23	6.9																								
EBusFR	East Branch upstream of the Finniss River Confluence	17/07/2017	118		416.81	6.41		146		4.6		7.6	4	40,600		2.2	192	8.2	0.02	21.9	14.8	6.14	12	0.03	33.3	239	12.3	0.9	33.6	7
EBusFR	East Branch upstream of the Finniss River Confluence	23/11/2017			706.58	7.52																								
EBusFR	East Branch upstream of the Finniss River Confluence	6/12/2017	57		646.03	6.71		57		4.9		7.2	4	238,000			296	32	0.18	32	131	13.2	12	0.03	52.4	1450	98.9	2.4	3.35	74
EBusFR	East Branch upstream of the Finniss River Confluence	19/01/2018	246		255.57	7																								
EBusFR	East Branch upstream of the Finniss River Confluence	15/02/2018			107.78	6.67																								
EBusFR	East Branch upstream of the Finniss River Confluence	2/03/2018	26.4		179	7		25		1.4		7.7	3	44,300		1.9	66.1	36.9	0.08	7	32.3	25.6	34	0.12	11.8	144	36.2	0.6	2.54	37.3
EBusFR	East Branch upstream of the Finniss River Confluence	15/03/2018			163	6.82																								
EBusFR	East Branch upstream of the Finniss River Confluence	11/04/2018			246.6	7.33																								
EBusFR	East Branch upstream of the Finniss River Confluence	18/07/2018			49.95	6.99				4.5			4	47,000	200	4.6	175	39.8	0.04	18.9	27.5	3.99	10	0.02	31	510	17.5	0.9	20.8	16.7
EBusFR	East Branch upstream of the Finniss River Confluence	5/02/2019			112.66	5.77		14		2		7.4	3	35,200	90	3	50.8	85.1	0.06	5.7	20.2	29	74	0.19	8.9	89.2	23.2	1.1	1.75	26.9
EBusFR	East Branch upstream of the Finniss River Confluence	19/03/2019			409.48	6.16		32		4		7.5	4.3	153,000	290	3	196	19.7	0.1	18.7	10.2	8.11	10	0.02	36.3	152	40	1.2	1.43	38.1
EBusFR	East Branch upstream of the Finniss River Confluence	8/04/2019			168.63	7.05		22		2		7.2	3.6	60,900	110	2	79.6	42.9	0.1	7.3	14.1	12.5	18	0.04	14.9	111	29.3	0.8	1.7	30.2
EBusFR	East Branch upstream of the Finniss River Confluence	8/05/2019			267.88	6.87		33		2		7.7	4.8	88,600	160	4	122	34.2	0.06	14.9	8.08	7.66	8	0.02	20.6	150	20.2	1	2.03	18.7
No. of samples			6.0	55.0	79.0	80.0	30.0	11.0	30.0	13.0	30.0	12.0	44.0	44	5.0	38.0	13.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
Minimum			19.4	1.0	0.0	0.0	7.0	14.0	10.0	1.4	1.8	7.2	2.4	18,900	90.0	1.9	50.8	0.9	0.0	3.2	4.8	4.0	2.0	0.0	4.7	51.2	11.9	0.4	1.3	6.7
Maximum			246.0	16.5	707.0	7.8	132.0	151.0	296.0	4.9	5.0	7.7	6.8	320,000	290.0	5.0	296.0	113.0	0.4	35.4	131.0	46.8	216.0	1.3	65.4	1450.0	136.0	2.4	33.6	141.0
Mean			82.8	5.2	289.6	6.8	53.9	58.8	64.6	3.1	3.7	7.5	4.0	78,489	170.0	3.2	143.8	26.7	0.1	14.3	22.0	15.7	40.5	0.1	24.2	196.3	30.3	0.8	6.6	27.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
Standard Deviation			87.8	3.7	152.8	0.9	39.5	51.5	60.1	1.4	1.7	0.2	0.8	58,636	79.7	0.9	81.9	24.3	0.1	8.7	21.3	11.3	48.6	0.2	14.1	211.6	22.4	0.4	8.5	23.2
80th Percentile			118.0	7.8	396.2	7.3	96.4	110.0	103.8	4.6	4.8	7.7	4.6	98,400	218.0	4.0	212.2	43.4	0.1	21.1	29.4	26.0	69.6	0.2	33.8	230.0	40.0	1.0	9.7	38.1
FR@GS204	Finniss River at Gauge Station 8150 204	30/01/2013			175.3	6.35	46		56.12		<5		4.7	21,100		5		17.2	<0.02	7.4	1.55	8.85	156	0.1	11.7	17.6	6.43	1.1	1.08	3.2
FR@GS204	Finniss River at Gauge Station 8150 204	26/02/2013		18.53	110	5.91	35		42.7		<5		3.1	9,500		5		37.1	0.02	4.4	2.05	6.35	214	0.12	7.2	21	4.87	0.6	0.669	3
FR@GS204	Finniss River at Gauge Station 8150 204	26/03/2013		47.73	79.9	6.36	29.6		29		<5		2.4	2,200		7		38.3	<0.02	3.3	0.3	2.13	216	0.11	4.7	5.72	1.52	0.6	0.275	1.4
FR@GS204	Finniss River at Gauge Station 8150 204	23/04/2013		5.35	149.8	7.31	63		76.86		<5		3.3	14,700		3		6.6	<0.02	8	2.89	4.16	90	0.03	12.9	28.9	7.18	0.5	0.755	5.3
FR@GS204	Finniss River at Gauge Station 8150 204	22/05/2013		8.89	227.4	6.17	74		90.28		<5		4	23,400		4		22.5	0.02	9.9	1.53	5.32	110	0.05	16.5	38	7.23	1.4	0.841	6.5
FR@GS204	Finniss River at Gauge Station 8150 204	22/05/2013														4														
FR@GS204	Finniss River at Gauge Station 8150 204	17/06/2013		2.79	256.3	6.89	99		119		<5		3.7	23,400		2		10.1	<0.02	14.9	0.82	5.24	136	0.02	23.5	19.9	6.27	0.7	1.78	3.5
FR@GS204	Finniss River at Gauge Station 8150 204	15/07/2013		2.13	302.1	7.78	262		177		<5		3.3	2,800		2		2.1	<0.02	19.1	0.94	2.21	20	0.02	29.4	34.2	1.56	0.6	2.83	1.2
FR@GS204	Finniss River at Gauge Station 8150 204	19/08/2013		2.26	397.7	7.48	199		212		<5		3	1,900		4		8.1	<0.02	22.5	0.99	2.31	14	0.01	34.8	42.6	1.42	0.7	3.34	0.6
FR@GS204	Finniss River at Gauge Station 8150 204	9/09/2013		2.07	415	6.82	224		220		<5		3.1	1,700		3		6.1	<0.02	23.9	1.03	2.44	22	<0.01	36.6	58.9	1.46	0.7	3.16	1
FR@GS204	Finniss River at Gauge Station 8150 204	7/10/2013		2.4	397.4	7	176		223		<5		3.3	1,300		3		12.2	<0.02	25	1.31	2.4	54	0.05	37.5	81.5	1.62	0.9	3.13	0.9
FR@GS204	Finniss River at Gauge Station 8150 204	5/11/2013		3.58	397.7	6.32	168		204		<5		3.2	2,400				20.8	0.02	23.6	0.94	6.34	82	0.54	36	54	3.41	1.3	3.07	15.4
FR@GS204	Finniss River at Gauge Station 8150 204	3/12/2013		10.47	552	6.19	42		42		<5		5.3	226,000		5		4.4	0.1	27.8	14.9	9.84	40	0.02	48.5	117	46.3	2	0.657	37.8
FR@GS204	Finniss River at Gauge Station 8150 204	7/01/2014		11.3	159.8	6.26	51		54		<5		3.6	21,200		5		12.6	<0.02	7.2	1.43	5.41	200	0.08	11.6	28.6	6.07	0.8	0.615	3.9
FR@GS204	Finniss River at Gauge Station 8150 204	4/02/2014		6.97	87.1	6.58	12.4		14		<5		2.4	21,700		3		89.7	0.04	3.8	6.12	26.9	134	1.32	6.2	49.4	16.2	0.6	1.3	26.1
FR@GS204	Finniss River at Gauge Station 8150 204	4/03/2014		10.91	140.6	7.71	47.4		44		<5		3	11,400		3		19.5	0.32	5.9	6.28	6.38	110	0.37	9	35.5	8.37	0.4	0.977	7.1
FR@GS204	Finniss River at Gauge Station 8150 204	1/04/2014		5.67	219.8	7.93	62		75.64		<5		3.1	20,100		3		5.4	<0.02	10.8	4.42	4.26	136	0.05	16.8	44.2	8.49	0.5	1.2	5.1
FR@GS204	Finniss River at Gauge Station 8150 204	28/04/2014		5.49	246.8	7.95	103		105		<5		3.3	10,800		2		6	<0.02	12.6	0.8	2.22	36	0.01	19.7	27.4	1.7	0.7	1.3	0.8
FR@GS204	Finniss River at Gauge Station 8150 204	27/05/2014		1.9	297.4	7.55	138		168.36		<5		3.1	6,400				4.1	<0.1	16.6	0.64	3.13	18	0.05	25.4	24.1	1.13	0.6	2.3	1.3
FR@GS204	Finniss River at Gauge Station 8150 204	23/06/2014		3.76	309.7	6.49	90		183		<5		3	2,200		2		1.7	<0.02	19.7	0.83	2.38	14	<0.01	31.1	32.7	0.89	0.6	2.82	0.4
FR@GS204	Finniss River at Gauge Station 8150 204	22/07/2014		2.92	314.7	7.38	216		196		<5		3.1	1,900		2		1.5	<0.02	23.5	0.85	1.98	10	0.01	35.5	36.7	0.91	0.6	3.24	0.7
FR@GS204	Finniss River at Gauge Station 8150 204	18/08/2014		2.62	351.6	7.09	204		205		<5		3.1	1,900		2		1.6	<0.02	24.3	0.78	2.2	16	0.01	36.8	34.4	0.88	0.7	3.26	0.6
FR@GS204	Finniss River at Gauge Station 8150 204	16/09/2014		3.73		7.52	216		219		<5		3	2,000		3		2.5	<0.02	24.1	1.08	2.3	26	0.02	38	73.4	1.12	0.7	3.49	0.4
FR@GS204	Finniss River at Gauge Station 8150 204	13/10/2014		4.79	444.8	6.88	222		203		<5		3.2	1,700		3		4.9	<0.02	25.2	1.76	2.29	52	0.05	40.1	117	1.43	0.8	4.32	0.8
FR@GS204	Finniss River at Gauge Station 8150 204	11/11/2014		4.86	490.6	6.78	260		227		<5		3.5	2,200		4		6.1	<0.02	25.3	2.18	2.57	90	0.05	40.4	203	1.95	1.4	4.91	0.7
FR@GS204	Finniss River at Gauge Station 8150 204	10/12/2014		3.78	430.2	7.48	206		238		<5		3.1	2,800		5		11.1	<0.02	22.5	0.93	2.15	74	0.07	37.7	67.1	1.2	1.1	3.28	0.5
FR@GS204	Finniss River at Gauge Station 8150 204	8/01/2015		30.7	72.2	6.51	18		24		<5		2.7	7,400				91.6	<0.02	3.3	4.09	7.13	214	0.17	5.1	29.9	5.28	1.1	0.685	6.7
FR@GS204	Finniss River at Gauge Station 8150 204	4/02/2015		11.72	123	6.49	37.2		37		<5		2.9	7,800		4		30.7	<0.02	4.5	2.39	5.44	230	0.09	7.1	23.8	4.9	0.6	0.547	3.3
FR@GS204	Finniss River at Gauge Station 8150 204	6/03/2015		12.91	115.2	7.46	36.8		38		<5		2.8	10,600		13		49.9	<0.02	5.2	3.99	7.8	138	0.1	7.8	35.1	6.75	0.5	0.686	5.4
FR@GS204	Finniss River at Gauge Station 8150 204	2/04/2015		7.58	140.2	7.24	47.6		50		<5		3.1	11,300		4		56.3	<0.02	6.4	2.87	5.22	138	0.08	9.9	34.8	6.18	0.5	0.684	5.9
FR@GS204	Finniss River at Gauge Station 8150 204	29/04/2015		5.18	304.5	6.96	112		126		<5		3.6	9,700		3		9.1	<0.02	14.4	0.96	4.38	154	0.14	22.8	32.9	2	0.5	2.12	2.4
FR@GS204	Finniss River at Gauge Station 8150 204	22/07/2015		2.26	352.8	6.6	100		200		<5		3.1	2,300		2		20	<0.02	22.6	0.73	2.97	30	0.19	36.8	31.8	1.34	0.6	3.58	9.5
FR@GS204	Finniss River at Gauge Station 8150 204	18/08/2015		3	347.4	6.71	196		210		<5		3.4	2,600		2		2.4	<0.02	24.6	0.83	2.94	22	0.22	40.6	45.3	1.27	0.6	4.09	0.7
FR@GS204	Finniss River at Gauge Station 8150 204	15/09/2015		1.88	447	7.14	222		231		<5		3.3	1,800		3		1.7	<0.02	23.6	1.6	2.51	16	0.01	38.7	167	1.72	0.8	4.26	0.5
FR@GS204	Finniss River at Gauge Station 8150 204	13/10/2015		1.81	479.4	7.6	328		250		<5		3.6	1,500		5		1.5	<0.02	25	1.98	1.44	14	<0.01	43.5	274	1.82	1.2	3.88	0.3
FR@GS204	Finniss River at Gauge Station 8150 204	9/11/2015		1.85	493.6	6.99	236		220		<5		3.7	2,700		4		2.7	<0.02	26.5	1.15	2.76	24	0.02	45.3	88.4	2.01	1.3	5.72	0.5
FR@GS204	Finniss River at Gauge Station 8150 204	10/12/201		2.16	481.2	7.58	214		197		<5		3	5,100		6		3.5	<0.02	21.1	1.13	2.74	32	0.04	39.4	51.6	1.78	1.3	5.39	0.9
FR@GS204	Finniss River at Gauge Station 8150 204	3/03/2016		9.99	142.1	7.5	37.2		47		<5		2.8	12,300		3		14.4	<0.02	6.1	2.44	5.62	156	0.08	10	32.1	5.86	0.5	0.647	3.6
FR@GS204	Finniss River at Gauge Station 8150 204	31/03/2016		7.3	144.4	7.45	48.6		45		<5		3.1	11,700		3		10.5	<0.02	6.2	1.87	4.51	196	0.07	9.9	29	5.14	0.6	0.61	3.5
FR@GS204	Finniss River at Gauge Station 8150 204	26/04/2016		3.53	260.1	7.18	110		106		<5		3.4	11,700		4		4.3	<0.02	13	0.9	2.29	92	0.02	20.1	38.1	2.02	0.6	1.57	0.8
FR@GS204	Finniss River at Gauge Station 8150 204	23/05/2016		7.06	108.1	7.1	82		90		<5		2.8	4,000		5		11.7	<0.02	10.3	0.7	2.53	96	0.04	16.8	38	1.38	1.1	0.922	1.4
FR@GS204	Finniss River at Gauge Station 8150 204	20/06/2016		11.62	340.1	7.14	120		161		<5		3.1	2,100		4		10.6	<0.02	17.8	0.76	2.13	16	0.02	28.2	46.4	1.04	0.8	2.9	1
FR@GS204	Finniss River at Gauge Station 8150 204	20/07/2016		3	389.5	7.53	166		168		<5		3	4,500		5		7.8	<0.02	19.5	0.94	3.99	56	0.05	31.5	50	1.55	0.8	4.06	1.1
FR@GS204	Finniss River at Gauge Station 8150 204	17/08/2016		2.88	398.7	7	146		209		<5		3.2	2,300		3		17	<0.02	22.3	0.98	2.25	38	0.02	36.7	68.9	1.26	0.7	4.57	0.8
FR@GS204	Finniss River at Gauge Station 8150 204	2/02/2017	24.2	9.25	86.4	6.34				1.8		7.6	2.6	6,700		4		45.5	<0.02	3.7	2.59	9.32	238	0.15	5.7	25.6	5.01	0.4	0.523	6
FR@GS204	Finniss River at Gauge Station 8150 204	27/02/2017			146.3	7.31				2.1		7.7	2.9	13,000			59.2	35.3	<0.02	6.7	4.91	7.68	122	0.06	10.3	36.9	8.15	0.5	0.817	7.3
FR@GS204	Finniss River at Gauge Station 8150 204	1/03/2017		7.82	146.3	7.31																								
FR@GS204	Finniss River at Gauge Station 8150 204	4/04/2017		9.41	96.98	7.06		38		2		7.7	2.8	9,300			42.6	30	<0.02	4.7 - 4.8	4.35	6.3	78	0.04	7.4	29.4	7.3	0.4	0.606	6.3
FR@GS204	Finniss River at Gauge Station 8150 204	7/04/2017			96.98	7.06																								
FR@GS204	Finniss River at Gauge Station 8150 204	26/04/2017	74		176.25	7.38		64		2.6		7.9	3.2	17,100			72.5	26.7	0.02	7.9	4.65	4.76	110	0.05	12.8	49.4	9.71	0.5	0.973	8.2
FR@GS204	Finniss River at Gauge Station 8150 204	29/05/2017			294.44	6.95		139		3.1		8.1	3.4	7,800		2.1	143	9.4	<0.02	15.9	0.91	2.45	20	<0.01	25.1	39.3	1.53	0.6	2.03	1.5
FR@GS204	Finniss River at Gauge Station 8150 204	20/06/2017			392.15	7.08		178		3.3		8	3.2	3,400		2	176	5.1	<0.02	19.5	0.92	2.05	16	<0.01	30.8	38.7	1.06	0.6	2.89	0.7
FR@GS204	Finniss River at Gauge Station 8150 204	17/07/2017	160		385.06	6.98		204		3.2		8	3.1	1,800		2.1	196	11.4	<0.02	22.1	0.93	2.6	18	0.04	34.1	52.2	1.13	0.7	2.91	2.6
FR@GS204	Finniss River at Gauge Station 8150 204	15/08/2017	334		425.87	7.26		215		3.4		8	3.1	1,700		2.1	209	17.7	<0.02	23.6	1	2.14	26	0.02	36.5	58.1	1.17	0.7	2.94	1.8
FR@GS204	Finniss River at Gauge Station 8150 204	13/09/2017	336		428.64	6.44		215		3.3		8	2.9	1,900		2.9	210	7.9	<0.02	23.2	1.12	2.18	22	0.04	36.9	83.7	1.24	0.7	3.66	1.7
FR@GS204	Finniss River at Gauge Station 8150 204	11/10/2017	166		452.9	7.74		219		3.5		8.3	3.2	1,800		3.1	230	20.8	<0.02	25.5	1.35	1.94	64	0.03	40.5	126	1.36	0.8	3.5	2.2
FR@GS204	Finniss River at Gauge Station 8150 204	8/11/2017	174		438.01	7.41		207		3.7		8.1	3.1	2,000			209	15.5	<0.02	23.6	0.84	1.89	52	0.06	36.5	66.9	1.07	0.9	2.68	2.8
FR@GS204	Finniss River at Gauge Station 8150 204	6/12/2017			308.34	7.73																								
FR@GS204	Finniss River at Gauge Station 8150 204	3/01/2018	242		357.22	7.57		179		3.3		7.9	3.1	1,100			164	16.3	<0.02	19.8	0.66	2.37	48	0.05	27.8	38.6	1.21	0.8	1.98	2.3
FR@GS204	Finniss River at Gauge Station 8150 204	26/04/2018	98		155.6	7.67		73		2.6		7.7	3	11,700		2.8	82.4	46.5	<0.02	9.4	1.27	3.22	134	0.05	14.3	35.3	3.56	0.7	1	4.2
FR@GS204	Finniss River at Gauge Station 8150 204	19/07/2018			53.15	6.61				4.1			3	1,800	200	4.6	184	10.5	<0.02	20.6	0.95	1.88	18	<0.01	32.1	53.8	0.86	0.6	2.94	2.2
FR@GS204	Finniss River at Gauge Station 8150 204	15/08/2018		3.09	373.12	7.12		211		4.6		8.2	2.5	20,100	240	5	230	37.4	<0.02	32.4	0.03	0.2	14	0.06	36.2	6.29	0.18	0.2	0.385	2.3
FR@GS204	Finniss River at Gauge Station 8150 204	11/09/2018			1165	6.99		210		3.5		8.3	3.1	1,700	220	3	216	14.2	<0.02	24.8	1	1.74	58	0.05	37.4	78.6	0.88	0.7	3.17	1.5
FR@GS204	Finniss River at Gauge Station 8150 204	16/10/2018			454.73	6.8		218		4		8	3.3	2,000	270	2	223	21.8	<0.02	25.1	1.21	1.94	56	0.06	38.9	136	1.2	1.2	2.92	3.6
FR@GS204	Finniss River at Gauge Station 8150 204	7/11/2018			349.72	7.73		220		4		8.1	3.2	1,800	220	8	222	68.5	<0.02	24.8	0.92	1.72	64	0.06	38.8	88.4	0.97	1.1	3.02	4.6
FR@GS204	Finniss River at Gauge Station 8150 204	3/12/2018			157.17	7.27		64		6		7.6	2.8	1,100	110	8	67.5	89.6	<0.02	8.3	0.64	3.44	370	0.28	11.4	47.7	1.09	2.7	0.524	2.5
FR@GS204	Finniss River at Gauge Station 8150 204	3/01/2019			232.15	7.29		104		4		7.8	2.6	1,700	130	4	106	61.6	<0.02	11.8	0.86	2.34	204	0.12	18.5	64.4	0.81	1.6	0.727	2.3
FR@GS204	Finniss River at Gauge Station 8150 204	19/03/2019			204.5	6.53		68		4		7.8	3.3	13,700	110	3	83.7	20.6	<0.02	9.5	0.68	2.17	34	0.02	14.6	21.3	3.15	1.1	0.509	2.1
FR@GS204	Finniss River at Gauge Station 8150 204	8/05/2019			159.91	6.85		46		4		7.8	3.7	26,300	110	5	72.8	34.6	<0.02	8.5	1.33	4.04	52	0.04	12.5	39.3	5.73	1.2	0.764	5.5
FR@GS204	Finniss River at Gauge Station 8150 204	23/07/2019			304.8	8.06		178		4			3.5	2,000	180	2	179	35.2	<0.02	19.6	0.67	1.63	14	<0.01	31.7	41.5	1.21	0.8	3.19	2.7
FR@GS204	Finniss River at Gauge Station 8150 204	30/01/2013			175.4	6.36	24		56.13		<5		4.8	21,101		5		17.3	<0.03	7.5	1.56	8.86	156	0.1	11.8	17.7	6.44	1.1	1.08	3.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
No. of samples			9.0	46.0	68.0	69.0	44.0	20.0	44.0	23.0	44.0	21.0	67.0	67	10.0	60.0	22.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
Minimum			24.2	1.8	53.2	5.9	12.4	38.0	14.0	1.8	0.0	7.6	2.4	1,100	110.0	2.0	42.6	1.5	0.0	3.3	0.0	0.2	10.0	0.0	4.7	5.7	0.2	0.2	0.3	0.3
Maximum			336.0	47.7	1165.0	8.1	328.0	220.0	250.0	6.0	0.0	8.3	5.3	226,000	270.0	13.0	230.0	91.6	0.3	32.4	14.9	26.9	370.0	1.3	48.5	274.0	46.3	2.7	5.7	37.8
Mean			178.7	7.2	293.4	7.1	125.6	152.5	133.8	3.5		7.9	3.2	10,757	179.0	3.8	153.5	20.9	0.1	16.3	1.8	4.0	85.4	0.1	25.4	55.0	3.9	0.8	2.2	3.8
Standard Deviation			108.8	8.1	173.2	0.5	83.6	69.4	77.5	0.9		0.2	0.5	27,629	60.1	1.9	66.3	21.7	0.1	8.1	2.1	3.6	75.2	0.2	12.9	44.9	6.0	0.4	1.4	5.7
80th Percentile			278.8	10.0	423.7	7.5	214.8	215.0	210.8	4.0		8.1	3.4	12,860	224.0	5.0	214.8	35.1	0.1	24.1	2.3	5.4	138.0	0.1	37.5	68.5	6.2	1.1	3.3	5.4
FRdsFC	Finniss River downstream Florence Creek	1/02/2013			118.8	6.73	35		42.7		<5		3	12,000		5		26.5	<0.02	4.7	0.43	6.83	282	0.16	7.9	14.2	2.74	0.8	0.477	1.4
FRdsFC	Finniss River downstream Florence Creek	28/02/2013			58.6	5.87	22		26.84		<5		3	4,900		5		63.7	0.02	2.6	0.62	8.61	320	0.21	4.3	9.73	2.9	0.4	0.49	1.7
FRdsFC	Finniss River downstream Florence Creek	28/03/2013		30.57	23.4	6.03	7.3		6		<5		1	1,000		5		85.7	0.02	0.7	0.3	3.21	182	0.14	1.1	3.88	1.29	0.4	0.218	1.9
FRdsFC	Finniss River downstream Florence Creek	26/04/2013		4.41	82.3	5.62	32		39.04		<5		3	6,600		4		10.9	<0.02	3.7	0.55	2.64	208	0.08	6.2	14.1	1.57	0.4	0.254	2.1
FRdsFC	Finniss River downstream Florence Creek	24/05/2013		11.66	92.1	7.22	25		30.5		<5		3	11,300		5		34.4	<0.02	3.5	0.25	1.41	164	0.05	6.1	9.66	1.12	0.9	0.294	1.3
FRdsFC	Finniss River downstream Florence Creek	19/06/2013		3.01	82.2	6.26	7.5		31		<5		2	7,800		3		17.8	<0.02	3.6	0.3	1.7	206	0.05	6.4	13.6	1.2	0.4	0.245	1
FRdsFC	Finniss River downstream Florence Creek	17/07/2013		2.75	60.5	7.26	17.8		23		<5		2	3,600				7.8	<0.02	2.3	0.44	0.91	124	0.02	4.1	23.7	0.76	0.4	0.167	0.9
FRdsFC	Finniss River downstream Florence Creek	17/07/2013		2.75	60.5	7.26	17.8		23		<5		2	3,600		2		10.5	<0.02	2.3	0.4	0.93	158	0.04	4.1	23.8	0.93	0.4	0.167	0.8
FRdsFC	Finniss River downstream Florence Creek	20/08/2013		1.76	48.8	5.52	18.1		17		<5		1.8	1,800		4		16.2	<0.02	1.8	0.32	0.86	148	0.04	3.2	15	0.58	0.2	0.155	0.5
FRdsFC	Finniss River downstream Florence Creek	10/09/2013		2.26	36.2	6.5	11.8		12		<5		1.8	700		2		21.8	<0.02	1.2	0.3	1.15	218	0.07	2.1	19.1	0.65	0.3	0.131	1.2
FRdsFC	Finniss River downstream Florence Creek	8/10/2013		1.84	41	6.21	14.6		12		<5		1.9	500		2		24.2	<0.02	1.2	0.14	1.12	354	0.1	2.2	13.4	0.68	0.4	0.136	0.9
FRdsFC	Finniss River downstream Florence Creek	7/11/2013		2.64	94.6	5.66	30.6		40		<5		2.5	1,800				19.1	<0.02	3.9	0.1	1.33	310	0.12	7	6.09	1.13	1.1	0.388	2.9
FRdsFC	Finniss River downstream Florence Creek	5/12/2013		25.53	70.5	5.88	275		28		<5		1.8	1,000		5		46.7	<0.02	2.8	0.36	3.16	412	0.62	4.5	14.8	1.54	1.1	0.287	1.2
FRdsFC	Finniss River downstream Florence Creek	9/01/2014		9.58	93.4	6.39	27		29		<5		2.7	10,200		5		23.8	<0.02	3.7	0.49	5.37	286	0.13	6.3	22.8	2.61	0.7	0.387	1.1
FRdsFC	Finniss River downstream Florence Creek	10/02/2014		16.6	31.9	6.03	4.4		8		<5		1.5	1,900		4		34.7	0.02	1.1	1.08	4.61	196	0.4	1.7	15.2	2.07	0.3	0.24	9.3
FRdsFC	Finniss River downstream Florence Creek	6/03/2014		30.7	41.9	7.21	12.4		10		<5		1.4	2,000		4		33	<0.02	1.1	0.36	1.74	142	0.1	1.9	10.6	0.94	0.4	0.126	1.2
FRdsFC	Finniss River downstream Florence Creek	4/04/2014		4.09	97.7	6.53	31.6		38.55		<5		2.3	4,700		3		14.6	<0.02	3.8	0.38	1.71	158	0.05	6.2	12.9	1.32	0.3	0.294	2.9
FRdsFC	Finniss River downstream Florence Creek	1/05/2014		4.3	97.1	6.71	40		39		<5		2.5	3,300		3		16.8	<0.02	4	0.32	1.3	198	0.06	6.5	15	1.02	0.5	0.345	1.3
FRdsFC	Finniss River downstream Florence Creek	31/05/2014		2.69	67.7	5.89	33		29		<5		2.1	2,000		2		7	<0.02	3	0.37	0.86	164	0.03	5.2	17.2	0.67	0.3	0.281	0.6
FRdsFC	Finniss River downstream Florence Creek	25/06/2014		2.33	55.2	5.91	22.4		25		<5		1.9	1,400		2		7.9	<0.02	2.5	0.37	0.76	138	0.02	4.4	15.4	0.6	0.2	0.322	0.4
FRdsFC	Finniss River downstream Florence Creek	24/07/2014		1.87	58.7	6.35	25		22		<5		1.9	1,000		2		10.2	<0.02	2.2	0.37	0.74	142	0.04	3.8	16.5	0.53	0.2	0.306	0.8
FRdsFC	Finniss River downstream Florence Creek	19/08/2014		1.98	39.2	6.38	12		12		<5		1.7	400		2		11	<0.02	1.3	0.43	0.79	174	0.05	2.2	15.2	0.5	0.1	0.19	0.7
FRdsFC	Finniss River downstream Florence Creek	17/09/2014		3.6	27.7	7.6	12		6		<5		1.6	300		2		19.3	<0.02	0.6	0.43	0.9	196	0.07	1.2	16.2	0.52	0.1	0.108	0.9
FRdsFC	Finniss River downstream Florence Creek	14/10/2014		3.18	21.9	7.31	13.6		2		<5		1.6	200		2		27.6	<0.02	0.3	0.56	1.15	236	0.1	0.6	19.2	0.71	0.2	0.099	2.2
FRdsFC	Finniss River downstream Florence Creek	13/11/2014		5.07	20.5	8.61	16.2		19.764		<5		1.6	100		2		17.5	<0.02	0.4	0.95	0.92	196	0.07	0.6	35.9	0.79	0.1	0.094	1.7
FRdsFC	Finniss River downstream Florence Creek	11/12/2014		10.62	33.5	5.46	3.5		3		<5		2	500		7		82.9	<0.02	0.4	0.71	2.43	298	0.11	0.8	18.5	0.98	1.2	0.149	3.3
FRdsFC	Finniss River downstream Florence Creek	8/01/2015		41.03	38.8	5.75	8.8		8		<5		2.1	3,500				107	<0.02	1.3	1.17	6.65	196	0.19	2.1	14.8	2.82	0.8	0.385	10
FRdsFC	Finniss River downstream Florence Creek	5/02/2015		9.29	59.6	6.67	172		20		<5		2.3	3,800		4		63.3	<0.02	2.3	0.93	4.51	262	0.14	3.7	15.9	2.15	0.5	0.338	2.4
FRdsFC	Finniss River downstream Florence Creek	6/03/2015		9.57	59.1	6.48	16.6		16		<5		2.1	4,000		4		57.4	<0.02	2.2	0.84	4.66	180	0.13	3.4	14.3	2.1	0.3	0.323	3.1
FRdsFC	Finniss River downstream Florence Creek	2/04/2015		9.95	67.1	7.32	21.6		23		<5		2.7	4,800		4		75	<0.02	2.6	0.61	3.85	224	0.15	4.3	13.7	1.83	0.2	0.329	4.1
FRdsFC	Finniss River downstream Florence Creek	30/04/2015		2.82	83.6	6.81	28.2		30		<5		2.4	5,000		3		12.7	<0.02	3.3	0.39	1.37	224	0.08	5.6	13.5	0.96	0.2	0.248	1.1
FRdsFC	Finniss River downstream Florence Creek	26/05/2015		2.59	71.2	7.26	24.6		24		<5		2.1	1,800		2		16.5	<0.02	2.6	0.4	0.96	150	0.04	4.4	15.1	0.73	0.3	0.219	0.8
FRdsFC	Finniss River downstream Florence Creek	1/07/2015		2.52	50.7	7.28	18		17	2.3		1.9		600		2		22.7	<0.02	1.8	0.38	0.81	172	0.05	3.2	13.5	0.57	0.2	0.199	1.2
FRdsFC	Finniss River downstream Florence Creek	23/07/2015		2.5	38.2	6.98	12.4		12		<5		1.8	400		2		35.4	<0.02	1.2	0.4	0.87	174	0.07	2.2	12	0.52	0.2	0.153	1.3
FRdsFC	Finniss River downstream Florence Creek	19/08/2015		4.81	23.6	7.38	11.9		7		<5		1.7	300		2		26.9	<0.02	0.8	0.73	1.15	166	0.09	1.4	22.1	0.69	0.2	0.132	1.1
FRdsFC	Finniss River downstream Florence Creek	16/09/2015		3.17	18.4	6.95	3.2		3		<5		1.5	100		2		27.4	<0.02	0.4	0.83	1.26	164	0.09	0.6	23.2	0.75	0.1	0.112	1.6
FRdsFC	Finniss River downstream Florence Creek	13/10/2015		3.15	17.1	7.04	2.4		3		<5		1.6	200		5		19.6	<0.02	0.3	1.05	1.2	136	0.07	0.5	24.7	0.71	0.2	0.099	1.3
FRdsFC	Finniss River downstream Florence Creek	10/11/2015		4.3	15.5	7.33	2.6		2		<5		1.6	200		3		26.5	<0.02	0.4	1.91	1.36	240	0.11	0.5	42.6	0.85	0.1	0.111	1.5
FRdsFC	Finniss River downstream Florence Creek	11/12/2015		11.59	21.9	6.17	2.8		2		<5		1.8	400		9		82.8	<0.02	0.3	1.27	2.09	266	0.1	0.6	25.4	1	0.8	0.171	2.5
FRdsFC	Finniss River downstream Florence Creek	6/01/2016		11.25	60.6	6.48	22.6		13		<5		2.4	6,500		6		30	<0.02	2.9	1.8	9.79	274	0.23	4.8	25.8	3.97	0.8	0.545	4.5
FRdsFC	Finniss River downstream Florence Creek	5/02/2016		13.84	30.3	6.59	9.07		7	1.5		1.7		1,700		5		62.1	<0.02	1	0.47	3.21	184	0.11	1.6	7.97	1.3	0.4	0.219	3.6
FRdsFC	Finniss River downstream Florence Creek	4/03/2016		6.27	62.1	6.28	22.2		17		<5		2.2	3,500		4		22.3	<0.02	2.1	0.55	3.26	242	0.12	3.7	13.5	1.57	0.4	0.228	2.4
FRdsFC	Finniss River downstream Florence Creek	1/04/2016		5.85	82.3	6.94	26		24		<5		2.5	5,000		3		16.7	<0.02	2.9	0.44	2.81	278	0.12	4.8	12.9	1.44	0.3	0.258	1.2
FRdsFC	Finniss River downstream Florence Creek	28/04/2016		2.99	70.3	7.11	28		28		<5		2.3	3,200		3		10.8	<0.02	2.9	0.51	1.24	176	0.06	4.9	21.4	0.96	0.3	0.185	0.7
FRdsFC	Finniss River downstream Florence Creek	25/05/2016		2.9	90.2	6.56	24.8		29		<5		2.4	7,000		3		11.2	<0.02	3.8	0.56	1.22	136	0.04	6.3	29.2	0.91	0.4	0.256	1.1
FRdsFC	Finniss River downstream Florence Creek	22/06/2016		4.88	32.4	6.94	12.2		31		<5		1.8	2,400		3		18.6	<0.02	1.4	0.49	0.97	120	0.05	2.5	18.6	0.58	0.3	0.087	1.6
FRdsFC	Finniss River downstream Florence Creek	21/07/2016		3.41	68	6.53	22.8		22		<5		2.1	2,200		4		23.7	<0.02	2.4	0.3	1.22	122	0.05	4.1	12.9	0.78	0.5	0.13	1.3
FRdsFC	Finniss River downstream Florence Creek	17/08/2016		3.38	27.6	6.65	9.2		6		<5		1.6	400		2		34.1	<0.02	0.7	0.6	1.18	198	0.09	1.2	22.3	0.61	0.2	0.1	1.2
FRdsFC	Finniss River downstream Florence Creek	2/02/2017	8.4		36.1	7.1				1.4		7.2	1.7	2,200		4		65.5	<0.02	1.2	0.64	4.47	212	0.13	1.8	10.6	1.51	0.2	0.218	6
FRdsFC	Finniss River downstream Florence Creek	2/03/2017		6.25	75.1	7.24				2		7.2	2.3	5,200			30.2	42.2	<0.02	3.3	0.73	4.4	170	0.1	5.3	15	2	0.3	0.301	4.9
FRdsFC	Finniss River downstream Florence Creek	7/04/2017			64.98	6.41		23		2.4		7.3	2.4	4,300			23.8	64.5	<0.02	2.6	0.62	5.02	212	0.17	4.2	12.6	2.3	0.3	0.286	9.1
FRdsFC	Finniss River downstream Florence Creek	28/04/2017	25.6		77.05	7.92		28		2.5		7.5	2.5	5,900			29.5	49.7	<0.02	3.2	1	2.73	244	0.12	5.3	25.4	2.07	0.4	0.266	3.8
FRdsFC	Finniss River downstream Florence Creek	29/05/2017			87.56	7.05		32		2.4		7.3	2.3	3,600		2	33.1	12	<0.02	3.4	0.51	1.13	184	0.04	6	23.9	0.93	0.3	0.277	1.3
FRdsFC	Finniss River downstream Florence Creek	22/06/2017			75.11	6		28		2.3		7.5	2.1	1,900		1.9	26.7	11.8	<0.02	2.8	0.46	0.78	138	0.04	4.8	18.7	0.66	0.3	0.254	1.1
FRdsFC	Finniss River downstream Florence Creek	19/07/2017	23		53.72	7.2		24		2.2		7.3	1.9	700		2.3	22.7	18.6	<0.02	2.3	0.39	0.94	212	0.05	4.1	19.7	0.69	0.3	0.243	1.2
FRdsFC	Finniss River downstream Florence Creek	17/08/2017	15.4		41.89	6.77		21		2.2		6.9	1.8	400		1.7	16.6	20.5	<0.02	1.7	0.39	0.79	166	0.05	3	18.7	0.59	0.2	0.178	0.8
FRdsFC	Finniss River downstream Florence Creek	14/09/2017	4.8		17.21	6.34		5		2.1		6.7	1.4	100		2.2	3.8	19.1	<0.02	0.4	0.48	0.87	124	0.05	0.7	18.7	0.51	0.2	0.086	2.5
FRdsFC	Finniss River downstream Florence Creek	8/11/2017	10.4		49.45	6.42		21		2.6		7.7	1.7	2,700			14.7	31.2	<0.02	1.6	0.96	1.68	268	0.12	2.6	37.5	1.21	0.6	0.196	2.3
FRdsFC	Finniss River downstream Florence Creek	7/12/2017	31.6		67.37	6.87		28		2.7		7.4	1.8	900			26.3	54.1	<0.02	2.8	0.34	1.89	262	0.11	4.7	22.8	1.02	0.7	0.258	5.8
FRdsFC	Finniss River downstream Florence Creek	2/03/2018	18.8		59.37	7.06		17		1.6		7.6	2	4,200			20.8	30.8	<0.02	2.3	0.77	4.93	222	0.13	3.6	11.8	2.27	0.4	0.344	3.9
FRdsFC	Finniss River downstream Florence Creek	19/07/2018			80.2	7.42				2.5			1.9	800	50	3.8	23.5	23.5	<0.02	2.5	0.38	0.88	114	0.05	4.2	17.1	0.56	0.3	0.293	7.9
FRdsFC	Finniss River downstream Florence Creek	16/08/2018			54.9	7.24		21		2.2		7.3	1.8	400	30	5	19.4	51.8	<0.02	2.1	0.34	0.8	176	0.09	3.5	15.5	0.57	0.2	0.245	3
FRdsFC	Finniss River downstream Florence Creek	12/09/2018			88.07	7.17		12		2.3		7.3	1.7	300	20	2	13.2	22.2	<0.02	1.4	0.32	0.79	134	0.06	2.4	16.4	0.52	0.2	0.165	1.8
FRdsFC	Finniss River downstream Florence Creek	16/10/2018			18.32	6.2		3		2.1		6.2	1.5	<100	10	<1	3.9	22.1	<0.02	0.4	0.55	1.07	168	0.08	0.7	22.3	0.61	0.2	0.093	3.1
FRdsFC	Finniss River downstream Florence Creek	7/11/20188			15.3	6.07		3		<2		6.3	1.7	200	20	7	4.7	203	0.02	0.6	1.15	0.95	284	0.17	0.8	40.7	0.72	0.3	0.092	
FRdsFC	Finniss River downstream Florence Creek	3/12/2018	24		178.38	7.43		91		4		7.8	2.7	1,600	120	3	90.5	38.9	<0.02	9.7	0.1	1.7	76	0.04	16.1	5.47	1.29	1	2.69	1.4

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRdsFC	Finniss River downstream Florence Creek	3/01/2019			178.38	7.34		47		4		7.6	2.1	600	60	2	47.9	55.1	<0.02	5.2	0.08	1.02	142	0.04	8.5	4.78	0.7	0.6	0.608	1.8
FRdsFC	Finniss River downstream Florence Creek	3/01/2019			122.38	7.11																								
FRdsFC	Finniss River downstream Florence Creek	7/02/2019			48.71	6.27		12		2.2		7.4	2.3	4,400	30	4	17.5	129	<0.02	2	0.64	7.81	262	0.21	3.1	9.96	2.81	0.6	0.523	2.7
FRdsFC	Finniss River downstream Florence Creek	21/03/2019			139.57	6.89		47		2		7.8	3	12,400	90	4	60.4	31.1	<0.02	6.6	0.21	2.96	52	0.05	10.7	7.08	1.82	1	0.472	1.3
FRdsFC	Finniss River downstream Florence Creek	10/04/2019			51.1	6.79		16		2		7.1	2.3	4,700	30	3	17.5	50.4	<0.02	1.8	0.32	4.38	156	0.11	3.1	7.38	1.73	0.6	0.336	2.3
FRdsFC	Finniss River downstream Florence Creek	10/05/2019			86	6.63		24		4		7.6	3	7,400	50	5	30.4	50	<0.02	3.3	0.45	3.68	132	0.09	5.4	17.3	1.78	1	0.286	3.6
FRdsFC	Finniss River downstream Florence Creek	24/07/2019			33.14	7.21		8		2			1.8	1,200	30	1	9	49.3	<0.02	1	0.45	0.95	154	0.06	1.6	19.1	0.58	0.3	0.057	3.2
No. of samples			9.0	47.0	73.0	73.0	48.0	21.0	48.0	24.0	48.0	22.0	72.0	72	12.0	63.0	23.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	71.0
Minimum			4.8	1.8	15.3	5.5	2.4	3.0	2.0	1.4	1.5	6.2	1.4	100	10.0	1.0	3.8	7.0	0.0	0.3	0.1	0.7	52.0	0.0	0.5	3.9	0.5	0.1	0.1	0.4
Maximum			31.6	41.0	178.4	8.6	275.0	91.0	42.7	4.0	2.3	7.8	3.0	12,400	120.0	9.0	90.5	203.0	0.0	9.7	1.9	9.8	412.0	0.6	16.1	42.6	4.0	1.2	2.7	10.0
Mean			18.0	7.5	60.9	6.7	26.4	24.3	19.1	2.4	1.9	7.3	2.0	2,925	45.0	3.4	25.5	36.7	0.0	2.3	0.6	2.4	196.6	0.1	3.8	17.3	1.2	0.4	0.3	2.4
Standard Deviation			8.9	8.5	34.0	0.6	43.9	19.5	11.7	0.7	0.6	0.4	0.4	2,953	32.1	1.6	19.4	31.6	0.0	1.6	0.3	2.0	64.5	0.1	2.6	7.6	0.7	0.3	0.3	2.1
80th Percentile			24.6	10.5	83.1	7.2	27.6	28.0	29.0	2.6	2.1	7.6	2.4	4,800	58.0	5.0	30.3	53.6	0.0	3.3	0.7	3.8	258.4	0.1	5.4	22.7	1.8	0.6	0.3	3.2
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	6/08/2010			1140	6.6					15	6.19	11	458,000				3	<0.2	50.1	22.7	13.1	<200	<0.1	94.8	160	45.9	1.1	1.73	45
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	30/01/2012			226	6.94					<5		4	79,800				34	0.2	8.3	72.1	44.1	40	0.3	16.3	271	70.8	0.7	2.28	85
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	26/05/2014		1.69	1225	7.21	62.2		60		10		10	634,000		4		1.4	0.74	68	52.8	9.54	4	0.02	135	196	269	1.1	8.83	248
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	19/07/2018			148.64	6.76				9.9			11	507,000	820	5.3	608	66.4	0.06	61.5	8.09	10.5	4	0.01	110	115	24.5	1.3	15.8	29.7
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	14/08/2018		2.4	1342.5	7.09		100		9.9		7.8	12	540,000	880	7	666	30.9	0.04	68.1	3.69	11.2	2	0.03	120	62.2	17.5	0.9	21.5	22.2
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	2/01/2019			878.84	7.36		41		8		7.5	8	460,000	740	3	530	46.8	0.18	51	21.1	13.9	4	0.03	97.8	257	90.8	2.4	1.36	97
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	6/02/2019			195.14	6.42		16		2.3		7.5	3.8	61,900	120	2	78.2	69.8	0.1	7.7	38.2	34.8	64	0.17	14.3	172	38.3	1	2.55	45.9
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	20/03/2019			426.13	6.13		25		2		7.6	5.2	164,000	300	3	194	48.5	0.24	20.2	59.6	25.6	12	0.05	34.9	299	76.8	1.2	2.43	95.7
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	9/04/2019			194.62	6.94		22		2		7.1	3.6	60,100	110	2	78.3	52	0.12	7.1	30.3	22.1	22	0.04	14.7	155	39	0.8	2.24	46.2
EBdsRB	East Branch Finniss River downstream Historic Rail Bridge	9/05/2019			281.73	6.78		26		2		7.5	4.7	96,400	190	4	123	42.9	0.14	11.6	38.9	12.6	6	0.03	22.9	251	55.7	0.9	2.46	68
No. of samples			0.0	2.0	10.0	10.0	1.0	6.0	1.0	7.0	3.0	7.0	10.0	10	7.0	8.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum			0.0	1.7	148.6	6.1	62.2	16.0	60.0	2.0	10.0	6.2	3.6	60,100	110.0	2.0	78.2	1.4	0.0	7.1	3.7	9.5	2.0	0.0	14.3	62.2	17.5	0.7	1.4	22.2
Maximum			0.0	2.4	1342.5	7.4	62.2	100.0	60.0	9.9	15.0	7.8	11.9	634,000	880.0	7.0	666.0	69.8	0.7	68.1	72.1	44.1	64.0	0.3	135.0	299.0	269.0	2.4	21.5	248.0
Mean				2.0	605.9	6.8	62.2	38.3	60.0	5.2	12.5	7.3	7.4	306,120	451.4	3.8	325.4	39.6	0.2	35.4	34.7	19.7	17.6	0.1	66.1	193.8	72.8	1.1	6.1	78.3
Standard Deviation				0.5	484.7	0.4		31.3		3.9	3.5	0.5	3.3	232,110	346.5	1.7	264.0	23.2	0.2	26.6	22.1	11.8	21.3	0.1	49.5	75.2	72.7	0.5	7.1	65.2
80th Percentile				2.3	1157.0	7.1	62.2	41.0	60.0	9.5	14.0	7.6	10.7	513,600	804.0	4.8	592.4	54.9	0.2	62.8	54.2	27.4	29.2	0.1	112.0	259.8	79.6	1.2	10.2	96.0
FC@LB	Fitch Creek at Lease Boundary	15/04/2009			126.4	7.43			536.36					600				40	<0.2	1.9	0.6		200	0.2	10.3	21.1	0.6		0.3	5
FC@LB	Fitch Creek at Lease Boundary	30/01/2013			81.3	7.5	24		29.28		<5		3	300				51.8	<0.02	0.9	0.08	0.73	86	0.15	4	6.91	0.23	0.7	0.414	0.8
FC@LB	Fitch Creek at Lease Boundary	11/02/2013	4.24		77.7	6.52																								
FC@LB	Fitch Creek at Lease Boundary	27/02/2013	9.13		49.3	6.01	17		20.74		<5		3	200		3		48.4	<0.02	0.7	0.1	0.27	84	0.08	3	4.84	0.36	0.5	0.32	0.6
FC@LB	Fitch Creek at Lease Boundary	11/03/2013	4.79		47.8	6.8																								
FC@LB	Fitch Creek at Lease Boundary	27/03/2013	8.01		47.5	6.13	14.2		14		<5		2	300		3		32.2	<0.02	0.6	0.13	0.43	76	0.09	2.3	5.94	0.41	0.7	0.219	1.3
FC@LB	Fitch Creek at Lease Boundary	8/04/2013	3.34		43.4	5.86																								
FC@LB	Fitch Creek at Lease Boundary	24/04/2013	2.85		65.3	7.64	29		35.38		<5		2.7	600		4		15	<0.02	1	0.19	1.22	66	0.1	5.2	5.76	0.35	0.6	0.21	3.6
FC@LB	Fitch Creek at Lease Boundary	8/05/2013	10.22		116.4	6.78																								
FC@LB	Fitch Creek at Lease Boundary	23/05/2013	2.86		107.9	8.05	46		56.12		<5		3.2	500		3		27.8	<0.02	1.6	0.19	0.52	62	0.03	8.7	7.28	0.27	0.6	0.266	1.4
FC@LB	Fitch Creek at Lease Boundary	3/06/2013	6.29		62.8	7.14																								
FC@LB	Fitch Creek at Lease Boundary	18/06/2013	2.56		74.9	7.42	30.8		38		<5		3	400		2		18.1	<0.02	1.3	0.17	0.26	60	0.03	6.8	4.73	0.23	0.4	0.216	0.5
FC@LB	Fitch Creek at Lease Boundary	1/07/2013	1.38		91.5	6.78																								
FC@LB	Fitch Creek at Lease Boundary	16/07/2013	1.95		100.4	7.3	37.8		35		<5		3.8	10900		2		5.9	<0.02	1.3	0.13	1.62	380	0.09	8	6.28	0.52	0.7	0.311	0.8
FC@LB	Fitch Creek at Lease Boundary	4/12/2013	20.27		149.8	7.33	80		62		<5		3.1	400		7		56.6	<0.02	2.3	0.09	1.14	82	0.1	12.3	2.06	0.32	1.4	0.606	0.8
FC@LB	Fitch Creek at Lease Boundary	12/12/2013	23.13		67.8	6.61																								
FC@LB	Fitch Creek at Lease Boundary	8/01/2014	7.85		45.8	7.25	14.5		17		<5		3	400		3		39.4	<0.02	0.6	0.14	1.94	116	0.05	2.8	7.31	0.14	0.5	0.309	<0.1
FC@LB	Fitch Creek at Lease Boundary	20/01/2014	16.43		28.3	7.45																								
FC@LB	Fitch Creek at Lease Boundary	5/02/2014	5.91		19.2	7.92	10.4		7		<5		1.4	<100		3		34	<0.02	0.5	0.05	0.28	62	0.1	1	3.65	0.11	0.6	0.158	0.8
FC@LB	Fitch Creek at Lease Boundary	14/02/2014	4.16		32	6.92																								
FC@LB	Fitch Creek at Lease Boundary	5/03/2014	6.38		57.3	8.25	17.2		21		<5		2.6	200		3		71.9	<0.02	0.7	0.11	0.12	100	0.12	3.4	4.12	0.11	0.6	0.187	0.6
FC@LB	Fitch Creek at Lease Boundary	18/03/2014	3.08		62.3	6.37																								
FC@LB	Fitch Creek at Lease Boundary	2/04/2014	1.76		113.6	8.03	52		63.44		<5		2.8	700		2		11.3	<0.02	1.9	0.27	0.69	78	0.03	10.5	12	0.26	0.3	0.263	0.8
FC@LB	Fitch Creek at Lease Boundary	29/04/2014	1.9		179.8	8.02	78.67		75		<5		3.3	500		3		9.9	<0.02	2.5	0.18	0.73	76	0.02	15.8	6.17	0.25	0.5	0.448	0.5
FC@LB	Fitch Creek at Lease Boundary	14/05/2014	2		135.5	6.87																								
FC@LB	Fitch Creek at Lease Boundary	23/05/2014	1.88		125.1	7.31	57.8		56		<5		4.4	5000		4		2.5	<0.02	1.8	0.37	0.89	106	0.02	12.4	27.7	0.77	0.8	0.348	0.5
FC@LB	Fitch Creek at Lease Boundary	7/01/2015	7.64		40.3	6.53	17.8		13		<5		2.5	500				124	<0.02	0.8	0.12	0.5	74	0.12	2.6	5.7	0.38	1.2	0.592	3.2
FC@LB	Fitch Creek at Lease Boundary	20/01/2015	34.47		55.6	6.6																								
FC@LB	Fitch Creek at Lease Boundary	4/02/2015	3.45		49.8	5.86	18.8		17		<5		2.7	300		2		33.9	<0.02	0.6	0.15	0.98	82	0.14	2.9	5.41	1.1	0.6	0.262	5.9
FC@LB	Fitch Creek at Lease Boundary	5/03/2015	2.71		44.7	6.27	21		15		<5		2.4	200		4		43.6	<0.02	0.6	0.1	0.25	62	0.05	2.6	4.2	0.2	0.5	0.178	3
FC@LB	Fitch Creek at Lease Boundary	18/03/2015	2.1		53.1	7.54																								
FC@LB	Fitch Creek at Lease Boundary	31/03/2015	3.55		57.4	7.49	28		25		<5		2.8	400		3		69.4	<0.02	0.9	0.13	0.28	90	0.06	4.5	5.22	0.18	0.2	0.232	2.9
FC@LB	Fitch Creek at Lease Boundary	16/04/2015	3.4		104.8	7.71																								
FC@LB	Fitch Creek at Lease Boundary	28/04/2015	1.48		124.7	6.94	84		52		<5		3.5	3300		3		6.5	<0.02	1.6	0.68	0.62	172	0.04	10.3	19.1	0.73	0.4	0.374	0.8
FC@LB	Fitch Creek at Lease Boundary	13/05/2015			122.2	7.53																								
FC@LB	Fitch Creek at Lease Boundary	6/01/2016	3.31		35.5	7.62	14.6		12		<5		2.5	200		6		25.8	<0.02	0.6	0.13	0.78	66	0.06	2.6	4.16	0.26	0.8	0.419	1.1
FC@LB	Fitch Creek at Lease Boundary	21/01/2016	6.85		46.1	7.35																								
FC@LB	Fitch Creek at Lease Boundary	4/02/2016	3.6		19.8	6.36	8.6		4		1.2		2.1	300		2		39.5	<0.02	0.1	0.09	0.24	62	0.06	0.6	3.75	0.13	0.7	0.303	4.3
FC@LB	Fitch Creek at Lease Boundary	17/02/2016	3.82		30.3	6.89																								
FC@LB	Fitch Creek at Lease Boundary	3/03/2016	2.44		56.5	7.15	22.2		23		<5		2.4	400		3		17	<0.02	0.8	0.33	0.48	94	0.04	4.2	8.58	0.32	0.5	0.223	1.2
FC@LB	Fitch Creek at Lease Boundary	16/03/2016	3.32		51.8	7.19																								

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FC@LB	Fitch Creek at Lease Boundary	30/03/2016		1.71	45	6.66	24		23		<5		2.6	200		2		17.3	<0.02	0.8	0.1	0.27	68	0.04	4.2	2.88	0.14	0.4	0.225	1.2
FC@LB	Fitch Creek at Lease Boundary	12/04/2016		1.03	71.7	7.09																								
FC@LB	Fitch Creek at Lease Boundary	28/04/2016		3.36	77.9	6.61	29.4		28		<5		3.5	8500		3		8.4	<0.02	1.1	0.55	1.71	272	0.06	6.4	35.3	0.92	0.5	0.278	0.9
FC@LB	Fitch Creek at Lease Boundary	13/05/2016		2.25	132.8	6.9																								
FC@LB	Fitch Creek at Lease Boundary	24/05/2016		2.92	91	7.58	50		36		<5		4.2	8200		4		11	<0.02	1.4	0.2	1.41	200	0.05	8.9	11.6	0.55	0.8	0.337	0.7
FC@LB	Fitch Creek at Lease Boundary	30/01/2017	21.6		32.8	7.23				1.3		7.3	2.4	200		3		58	<0.02	0.6	0.13	0.27	86	0.07	2.3	5.07	0.16	0.4	0.277	2.6
FC@LB	Fitch Creek at Lease Boundary	27/02/2019			38.3	7.2				1.1		7.1	2.5	400			13	41.7	<0.02	0.6	0.16	0.32	72	0.06	2.8	5.46	0.27	0.5	0.249	2.2
FC@LB	Fitch Creek at Lease Boundary	14/03/2017		3.66		7.63																								
FC@LB	Fitch Creek at Lease Boundary	6/04/2017			45.53	6.29		17		1.7		7.3	2.5	200			13.9	51.5	<0.02	0.7	0.11	0.28	70	0.06	2.9	3.43	0.16	0.7	0.194	2.5
FC@LB	Fitch Creek at Lease Boundary	11/04/2017			54.85	7.22																								
FC@LB	Fitch Creek at Lease Boundary	24/04/2017	28.8		60.43	6.38		37		1.4		8	2.8	400			22	27.3	<0.02	1	0.17	0.23	108	0.04	4.8	7.47	0.2	0.5	0.203	2.5
FC@LB	Fitch Creek at Lease Boundary	19/01/2018			59.82	7.11																								
FC@LB	Fitch Creek at Lease Boundary	14/02/2018			20.64	6.34																								
FC@LB	Fitch Creek at Lease Boundary	1/03/2018	20.2		43.91	6.55		16		1.3		7.4	2.2	100		2.2	13	34.8	<0.02	0.7	0.09	0.29	80	0.05	2.7	3.85	0.14	0.6	0.22	1.6
FC@LB	Fitch Creek at Lease Boundary	14/03/2018			48.47	6.66																								
FC@LB	Fitch Creek at Lease Boundary	11/04/2018			95.23	6.9																								
FC@LB	Fitch Creek at Lease Boundary	23/04/2018			76.3	7.69																								
FC@LB	Fitch Creek at Lease Boundary	29/01/2019			62.64	6.97		23		2.2		7.4	2.8	300	50	3	20.2	196	<0.02	1	0.09	0.58	98	0.15	4.3	2.7	0.28	1.1	0.76	1.2
FC@LB	Fitch Creek at Lease Boundary	4/02/2019			39.34	6.34		12		2		7.3	2.4	300	30	3	11.2	201	<0.02	0.7	0.12	0.48	114	0.17	2.3	8.5	0.26	0.9	0.477	3.9
FC@LB	Fitch Creek at Lease Boundary	20/03/2019			97.18	6.65		40		2		7.8	3.5	300	50	4	38.7	25.3	<0.02	1.6	0.12	0.38	102	0.06	8.4	5.41	0.29	0.6	0.289	1
FC@LB	Fitch Creek at Lease Boundary	9/04/2019			75.85	6.98		21		<2		7.2	2.8	200	30	2	14.8	61.8	0.02	0.7	0.13	0.75	92	0.26	3.1	4.63	0.5	0.6	0.253	14.1
FC@LB	Fitch Creek at Lease Boundary	9/05/2019			54.49	6.85		25		2		7.6	3.3	400	40	3	20.8	36.6	<0.02	0.9	0.15	0.27	66	0.05	4.5	5.35	0.19	0.6	0.215	2.5
No. of samples			3.0	44.0	62.0	63.0	25.0	8.0	26.0	10.0	25.0	10.0	35.0	36.0	5.0	30.0	9.0	36.0	36.0	36.0	36.0	35.0	36.0	36.0	36.0	36.0	36.0	35.0	36.0	36.0
Minimum			20.2	1.0	19.2	5.9	8.6	12.0	4.0	1.1	1.2	7.1	1.4	100.0	30.0	2.0	11.2	2.5	0.0	0.1	0.1	0.1	60.0	0.0	0.6	2.1	0.1	0.2	0.2	0.5
Maximum			28.8	34.5	179.8	8.3	84.0	40.0	536.4	2.2	1.2	8.0	4.4	10900.0	50.0	7.0	38.7	201.0	0.0	2.5	0.7	1.9	380.0	0.3	15.8	35.3	1.1	1.4	0.8	14.1
Mean			23.5	5.7	69.8	7.0	33.1	23.9	50.6	1.7	1.2	7.4	2.8	1322.9	40.0	3.1	18.6	44.3	0.0	1.0	0.2	0.6	104.6	0.1	5.5	7.9	0.3	0.6	0.3	2.2
Standard Deviation			4.6	6.5	35.2	0.6	22.3	9.9	100.9	0.4		0.3	0.6	2641.0	10.0	1.1	8.5	44.8		0.5	0.1	0.5	65.6	0.1	3.7	7.1	0.2	0.2	0.1	2.5
80th Percentile			25.9	7.2	99.8	7.5	50.4	32.2	56.0	2.0	1.2	7.6	3.3	600.0	50.0	4.0	21.3	56.6	0.0	1.6	0.2	0.9	108.0	0.1	8.7	8.5	0.5	0.7	0.4	3.0
EB@LB	East Branch Finniss River at Lease Boundary	30/01/2013			69.9	7.41	20.3		24.76		<5		5	200		6		483	<0.02	1.8	0.23	1.02	344	0.3	2.9	18.1	0.58	1	0.398	0.6
EB@LB	East Branch Finniss River at Lease Boundary	11/02/2013		11.67	78.2	6.77																								
EB@LB	East Branch Finniss River at Lease Boundary	27/02/2013		15.5	48.7	5.87	22		26.84		<5		5	<100		4		124	<0.02	1.3	0.14	0.48	184	0.15	2.1	12.1	0.44	0.4	0.208	0.9
EB@LB	East Branch Finniss River at Lease Boundary	11/03/2013		9.42	53	6.97																								
EB@LB	East Branch Finniss River at Lease Boundary	27/03/2013		17.8	43.8	6.15	17		15		<5		4	200		5		192	<0.02	1	0.15	0.55	148	0.16	1.7	9.14	0.52	0.8	0.208	1.1
EB@LB	East Branch Finniss River at Lease Boundary	8/04/2013		5.36	50.4	6																								
EB@LB	East Branch Finniss River at Lease Boundary	24/04/2013		5.14	56	7.95	25		30.5		<5		4.6	800		4		24.4	<0.02	1.6	0.11	0.26	128	0.09	2.9	12.3	0.13	0.4	0.127	0.7
EB@LB	East Branch Finniss River at Lease Boundary	7/05/2013		4.39	89.5	6.63																								
EB@LB	East Branch Finniss River at Lease Boundary	23/05/2013		6.78	77.1	7.66	33		40.26		<5		5.6	200		4		61.3	<0.02	2.1	0.18	0.59	192	0.09	3.9	30	0.26	0.7	0.167	1
EB@LB	East Branch Finniss River at Lease Boundary	3/06/2013		7.15	56	7.3																								
EB@LB	East Branch Finniss River at Lease Boundary	18/06/2013		4.76	60.3	7.26	34.8		32		<5		5.8	<100		3		29	<0.02	1.7	0.14	0.25	120	0.04	3.8	18	0.14	0.3	0.107	0.5
EB@LB	East Branch Finniss River at Lease Boundary	1/07/2013		3.61	94.3	6.74																								
EB@LB	East Branch Finniss River at Lease Boundary	4/12/2013		30.16	63.5	7.34	26		22		<5		3.1	900		7		442	<0.02	1.6	0.16	2.59	204	0.26	2.8	9.54	0.65	2.1	0.582	1.1
EB@LB	East Branch Finniss River at Lease Boundary	12/12/2013		36.13	73.8	6.39																								
EB@LB	East Branch Finniss River at Lease Boundary	8/01/2014		13.4	73	7.01	31.57		33		<5		5.5	200		4		94.1	<0.02	2	0.19	0.81	236	0.11	3.8	21.1	0.2	0.4	0.234	0.3
EB@LB	East Branch Finniss River at Lease Boundary	20/01/2014		24.27	35.5	7.3																								
EB@LB	East Branch Finniss River at Lease Boundary	5/02/2014		7.41	22.2	8.18	16		8		<5		2.1	<100		4		56.1	<0.02	0.7	0.06	0.46	94	0.15	0.9	3.72	0.2	0.6	0.097	1.9
EB@LB	East Branch Finniss River at Lease Boundary	14/02/2014		8.65	45.6	6.29																								
EB@LB	East Branch Finniss River at Lease Boundary	5/03/2014		6.69	59.5	8.16	18.6		22		<5		4.6	<100		3		95.2	<0.02	1.3	0.12	0.57	192	0.17	2.2	9.13	0.15	0.4	0.115	0.8
EB@LB	East Branch Finniss River at Lease Boundary	18/03/2014		6.32	57.3	6.5																								
EB@LB	East Branch Finniss River at Lease Boundary	2/04/2014		5.54	73.5	8.3	34.8		42.456		<5		5.3	<100		3		18.6	<0.02	2.2	0.21	0.58	204	0.09	4	29.4	0.15	0.6	0.128	0.3
EB@LB	East Branch Finniss River at Lease Boundary	29/04/2014		7.37	90.4	8.12	39		36		<5		6.6	200		3		35.2	<0.02	2.2	0.17	0.38	294	0.1	4.3	17.3	0.2	1.1	0.121	0.4
EB@LB	East Branch Finniss River at Lease Boundary	14/05/2014		9.02	139.2	6.54																								
EB@LB	East Branch Finniss River at Lease Boundary	24/05/2014		10.67	108.5	6.35	52.8		49		<5		6.9	800		4		22.4	<0.02	3.8	1.08	0.6	314	0.09	7.3	263	0.34	1.3	0.181	0.5
EB@LB	East Branch Finniss River at Lease Boundary	28/05/2014		10.65	145.4	6.32	63		76.86		<5		7.3	3400				2.2	<0.02	4.8	3.4	0.26	370	0.03	8.7	900	0.54	1	0.102	0.7
EB@LB	East Branch Finniss River at Lease Boundary	7/01/2015		31.8	47.3	6.64	18.6		17		<5		4.9	500				561	<0.02	1.3	0.31	1.84	244	0.46	2.1	14.1	0.99	1.4	0.536	16.9
EB@LB	East Branch Finniss River at Lease Boundary	20/01/2015		16.93	71	6.98																								
EB@LB	East Branch Finniss River at Lease Boundary	4/02/2015		6.6	54.9	6.47	24.2		22		<5		4.6	200		3		52.2	<0.02	1.3	0.14	0.28	142	0.09	2.3	12.2	0.2	0.4	0.17	3.6
EB@LB	East Branch Finniss River at Lease Boundary	17/02/2015		5.67		7.98																								
EB@LB	East Branch Finniss River at Lease Boundary	5/03/2015		7.27	49.7	6.63	20.6		21		<5		4.3	100		6		63.5	<0.02	1.3	0.11	0.24	122	0.07	2.2	9.01	0.19	0.4	0.113	2
EB@LB	East Branch Finniss River at Lease Boundary	18/03/2015		4.3	57.3	7.49																								
EB@LB	East Branch Finniss River at Lease Boundary	31/03/2015		5.57	51.5	7.38	23.8		23		<5		4.8	200		3		74	<0.02	1.3	0.12	0.36	156	0.11	2.5	11.4	0.18	0.3	0.123	2.2
EB@LB	East Branch Finniss River at Lease Boundary	16/04/2015		6.75	73.4	7.91																								
EB@LB	East Branch Finniss River at Lease Boundary	28/04/2015		2.92	117.4	7.29	48		59		<5		7	200		4		11.6	<0.02	3.8	0.48	0.45	328	0.06	7.5	67.2	0.18	0.6	0.166	0.5
EB@LB	East Branch Finniss River at Lease Boundary	13/05/2015			177.9	7.19																								
EB@LB	East Branch Finniss River at Lease Boundary	21/01/2016		17.12	43.9	7.38																								
EB@LB	East Branch Finniss River at Lease Boundary	17/02/2016		5.74	37.4	7.09																								
EB@LB	East Branch Finniss River at Lease Boundary	3/03/2016		5.65	57.7	7.32	27		24		<5		4.2	<100		2		32.6	<0.02	1.6	0.15	0.26	158	0.08	2.8	15.6	0.19	0.3	0.121	0.8
EB@LB	East Branch Finniss River at Lease Boundary	16/03/2016		5.17	67.9	7.17																								
EB@LB	East Branch Finniss River at Lease Boundary	30/03/2016		4.8	57.8	5.48	34.6		28		<5		5.2	100		4		32	<0.02	1.9	0.14	0.3	148	0.08	3.5	16.9	0.17	0.5	0.144	0.8
EB@LB	East Branch Finniss River at Lease Boundary	12/04/2016		3.88	88.5	7.15																								
EB@LB	East Branch Finniss River at Lease Boundary	13/05/2016		18.28	105.1	6.93																								
EB@LB	East Branch Finniss River at Lease Boundary	30/01/2017	10.4		29.1	7.46				1		7.2	2.4	100		7		158	<0.02	0.8	0.11	0.52	160	0.15	1.1	5.36	0.26	0.7	0.146	4.2
EB@LB	East Branch Finniss River at Lease Boundary	27/02/2017			49.8	7.43				1.2		7.3	4	<100			14.5	63.5	<0.02	1.6	0.13	0.27	150	0.11	2.6	13.1	0.22	0.4	0.162	2.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13		2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4				1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2				1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000

Location code	Location Name	Sampled Date	Alkalinity (Bicarbonate as CaCO3) Field	Turb_fd	EC (field)	pH (Field)	Alkalinity (Bicarbonate as CaCO3) (Disolved)	Alkalinity (Bicarbonate)	Bicarbonate (Disolved)	Chloride	Chloride (Disolved)	pH (Lab)	Sodium (Disolved)	Sulphate (Disolved)	TDS	TOC	Hardness as CaCO3	Aluminium (Disolved)	Cadmium (Disolved)	Calcium (Disolved)	Cobalt (Disolved)	Copper (Disolved)	Iron (Disolved)	Lead (Disolved)	Magnesium (Disolved)	Manganese (Disolved)	Nickel (Disolved)	Potassium (Disolved)	Uranium (Disolved)	Zinc (Disolved)
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
EB@LB	East Branch Finniss River at Lease Boundary	13/03/2017		6.07	43.2	7.25																								
EB@LB	East Branch Finniss River at Lease Boundary	27/03/2017			40.93	6.84		16		1.2		7.1	3.8	<100			10.3	49.1	<0.02	1.1	0.2	0.3	158	0.09	1.8	16.1	0.38	0.4	0.13	1.5
EB@LB	East Branch Finniss River at Lease Boundary	10/04/2017			40.93	6.84																								
EB@LB	East Branch Finniss River at Lease Boundary	11/04/2017			45.6	6.78																								
EB@LB	East Branch Finniss River at Lease Boundary	24/04/2017			50.72	7.69		24		1.3		7.5	4.4	<100			13.2	40.2	<0.02	1.3	0.16	0.24	160	0.1	2.4	17.7	0.15	0.4	0.126	1.7
EB@LB	East Branch Finniss River at Lease Boundary	30/05/2017			167.86	7.32		86		2.3		7.8	6.1	<100		3	72.5	6.4	<0.02	7.5	0.31	1.06	32	0.01	13.1	55.4	0.27	1.1	0.416	1.2
EB@LB	East Branch Finniss River at Lease Boundary	6/06/2017			305.74	6.78																								
EB@LB	East Branch Finniss River at Lease Boundary	19/01/2018			48.56	6.49																								
EB@LB	East Branch Finniss River at Lease Boundary	15/02/2018			36.45	6.66																								
EB@LB	East Branch Finniss River at Lease Boundary	28/02/2018	30.4		33.04	7.06		23		1.1		7.6	3.8	200		2.6	12.1	41.5	<0.02	1.3	0.12	0.34	176	0.14	2.1	11	0.19	0.4	0.155	1.1
EB@LB	East Branch Finniss River at Lease Boundary	14/03/2018			59.8	6.01																								
EB@LB	East Branch Finniss River at Lease Boundary	11/04/2018			64.18	7																								
EB@LB	East Branch Finniss River at Lease Boundary	23/04/2018			69.97	7.52																								
EB@LB	East Branch Finniss River at Lease Boundary	29/01/2019			56.32	6.71		21		1.9		7.2	4.6	400	90	5	13.4	811	<0.02	1.5	0.29	1.17	304	0.33	2.4	14.3	0.58	1.4	0.536	1
EB@LB	East Branch Finniss River at Lease Boundary	4/02/2019			28.28	6.25		13		1.7		7.4	3.4	500	20	3	10.4	216	<0.02	1.3	0.13	0.6	146	0.14	1.8	9.13	0.28	0.9	0.266	2.6
EB@LB	East Branch Finniss River at Lease Boundary	20/03/2019			44.55	6.48		13		<2		7.2	3.7	100	20	5	8.9	153	<0.02	1	0.1	0.59	214	0.23	1.6	6.31	0.3	1	0.211	2.5
EB@LB	East Branch Finniss River at Lease Boundary	9/04/2019			110.3	6.94		21		<2		7.1	4.1	200	30	2	11.7	131	0.02	1.3	0.18	0.43	170	0.14	2.1	12	0.21	0.6	0.168	2.7
EB@LB	East Branch Finniss River at Lease Boundary	9/05/2019			47.59	7.21		23		<2		7.6	5.4	100	40	3	13	108	<0.02	1.3	0.12	0.29	114	0.1	2.4	10.1	0.16	0.5	0.102	4.4
No. of samples			2.0	41.0	61.0	62.0	21.0	9.0	21.0	11.0	21.0	11.0	32.0	32.0	5.0	27.0	10.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Minimum			10.4	2.9	22.2	5.5	16.0	13.0	8.0	1.0	0.0	7.1	2.1	100.0	20.0	2.0	8.9	2.2	0.0	0.7	0.1	0.2	32.0	0.0	0.9	3.7	0.1	0.3	0.1	0.3
Maximum			30.4	36.1	305.7	8.3	63.0	86.0	76.9	2.3	0.0	7.8	7.3	3400.0	90.0	7.0	72.5	811.0	0.0	7.5	3.4	2.6	370.0	0.5	13.1	900.0	1.0	2.1	0.6	16.9
Mean			20.4	10.3	70.4	7.0	30.0	26.7	31.1	1.5		7.4	4.7	445.5	40.0	3.9	18.0	133.9	0.0	1.9	0.3	0.6	190.8	0.1	3.4	52.2	0.3	0.7	0.2	2.0
Standard Deviation			14.1	8.0	44.3	0.6	12.4	22.7	15.7	0.5		0.2	1.2	703.5	29.2	1.4	19.2	184.6		1.4	0.6	0.5	78.0	0.1	2.5	161.2	0.2	0.4	0.1	2.9
80th Percentile			26.4	15.5	88.5	7.4	34.8	23.4	40.3	1.8		7.6	5.6	500.0	50.0	5.0	13.6	157.0	0.0	2.1	0.2	0.6	242.4	0.2	3.9	20.5	0.4	1.0	0.2	2.6
EBdsDOH	East Branch Finniss River downstream Dyson's Overburden Heap	15/04/2009			329.4	6.37			213.325					89000				358	<0.2	7.6	15.4	2.6	800	0.1	20.3	469	38.1		9.15	5
EBdsDOH	East Branch Finniss River downstream Dyson's Overburden Heap	31/01/2019			141.56	6.09		4		0.8		6.8	1.5	10600	30	3	14	169	<0.02	1.6	4.43	10.3	106	0.1	2.4	36.9	6.59	1.1	2.06	1.7
No. of samples			0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Minimum			0.0	0.0	141.6	6.1	0.0	4.0	213.3	0.8	0.0	6.8	1.5	10600.0	30.0	3.0	14.0	169.0	0.0	1.6	4.4	2.6	106.0	0.1	2.4	36.9	6.6	1.1	2.1	1.7
Maximum			0.0	0.0	329.4	6.4	0.0	4.0	213.3	0.8	0.0	6.8	1.5	89000.0	30.0	3.0	14.0	358.0	0.0	7.6	15.4	10.3	800.0	0.1	20.3	469.0	38.1	1.1	9.2	5.0
Mean					235.5	6.2		4.0	213.3	0.8		6.8	1.5	49800.0	30.0	3.0	14.0	263.5		4.6	9.9	6.5	453.0	0.1	11.4	253.0	22.3	1.1	5.6	3.4
Standard Deviation					132.8	0.2								55437.2				133.6		4.2	7.8	5.4	490.7	0.0	12.7	305.5	22.3		5.0	2.3
80th Percentile					291.8	6.3		4.0	213.3	0.8		6.8	1.5	73320.0	30.0	3.0	14.0	320.2		6.4	13.2	8.8	661.2	0.1	16.7	382.6	31.8	1.1	7.7	4.3
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	28/05/2014		2.98	574	7.61	152		147		5		4.7	145000		4		7.1	<0.02	33.6	5.91	1.92	<2	0.01	52.4	202	11	0.6	3.81	10.6
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	19/07/2018			10	6.61				4.8			2.5	17600	240	4.2	218	41.8	<0.02	29.1	3.6	2.7	12	0.03	35.3	136	4.06	0.3	11.2	13
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	15/08/2018						203		3.3		8.2	3	1700	210	5	205	40.1	<0.02	23.5	0.86	1.68	24	0.03	35.6	52.7	0.79	0.6	3.03	2.6
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	5/02/2019			132.07	5.8		14		2.1		7.4	3.1	46400	110	3	60.6	84.2	0.1	6.2	25.2	27.6	64	0.17	11	112	28.3	1.1	1.81	33.8
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	19/03/2019			486.13	6.71		28		2		7.4	4.4	184000	300	3	226	25.6	0.2	21.1	19.4	7.14	10	0.02	42	189	77.3	1.2	1.2	98.1
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	8/04/2019			197.55	6.93		23		2		7.2	3.6	70800	140	2	90.3	41.3	0.1	7.9	20.2	14.1	16	0.03	17.1	133	34.5	0.9	1.92	37.6
EBdsHS	East Branch downstream of Hannah's Spring (EB2)	8/05/2019			273.49	7.18		30		4		7.7	4.9	91400	170	4	122	40.2	0.06	14.9	8.04	7.15	6	0.03	20.5	149	22.1	1	1.93	22.1
No. of samples			0.0	1.0	6.0	6.0	1.0	5.0	1.0	6.0	1.0	5.0	7.0	7.0	6.0	7.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum			0.0	3.0	10.0	5.8	152.0	14.0	147.0	2.0	5.0	7.2	2.5	1700.0	110.0	2.0	60.6	7.1	0.1	6.2	0.9	1.7	6.0	0.0	11.0	52.7	0.8	0.3	1.2	2.6
Maximum			0.0	3.0	574.0	7.6	152.0	203.0	147.0	4.8	5.0	8.2	4.9	184000.0	300.0	5.0	226.0	84.2	0.2	33.6	25.2	27.6	64.0	0.2	52.4	202.0	77.3	1.2	11.2	98.1
Mean				3.0	278.9	6.8	152.0	59.6	147.0	3.0	5.0	7.6	3.7	79557.1	195.0	3.6	153.7	40.0	0.1	19.5	11.9	8.9	22.0	0.0	30.6	139.1	25.4	0.8	3.6	31.1
Standard Deviation					214.7	0.6		80.4		1.2		0.4	0.9	66342.3	69.5	1.0	71.7	23.3	0.1	10.3	9.5	9.3	21.5	0.1	14.8	49.6	26.0	0.3	3.5	32.1
80th Percentile				3.0	486.1	7.2	152.0	64.6	147.0	4.0	5.0	7.8	4.6	134280.0	240.0	4.2	218.0	41.7	0.1	28.0	20.0	12.7	24.0	0.0	40.7	181.0	33.3	1.1	3.7	36.8
FRDSMB	Finniss River Downstream Mount Burton	27/03/2012			102.4	6.36	30		36.6		<5		2.6	700				16	<0.2	5.4	0.4	5.9	180	<0.1	8.1	7.6	0.7	0.2	0.28	2
FRDSMB	Finniss River Downstream Mount Burton	24/04/2012			219.2	6.23	92		112.24		<5		3.1	1600				47.6	<0.02	11.1	0.43	11.4	420	0.09	17.2	10.8	0.74	0.5	0.57	0.7
FRDSMB	Finniss River Downstream Mount Burton	23/05/2012			273.7	7.23	116		141.52		<5		3.2	1900				4.8	<0.02	15.1	0.29	6.28	64	0.02	22.9	12.5	1.05	0.6	0.796	1.4
FRDSMB	Finniss River Downstream Mount Burton	19/06/2012			473.3	7.58	162		197.64		<5			1600					0.08	20.1	0.16	5.78	166	0.03	30.7	12.4	0.89		1.06	
FRDSMB	Finniss River Downstream Mount Burton	16/07/2012			374.3	8.13	182		222.04					2000					<0.02	23	0.17	4.67	26	<0.01	34.4	16.1	0.84		1.28	1.6
FRDSMB	Finniss River Downstream Mount Burton	25/07/2012			355	7.89	182		222.04				3.3	2200				1.9	<0.02		0.2	5.95	34	0.01	35.3	11.2	0.62	0.6	1.42	1
FRDSMB	Finniss River Downstream Mount Burton	14/08/2012			346.9	7.86	202		246.44		<5			2400					<0.02	24	0.19	5.95	48	<0.01	36.4	12.7	0.56		1.42	0.9
FRDSMB	Finniss River Downstream Mount Burton	10/09/2012			392.2	7.8	224		273.28		<5			2600					<0.02	24.7	0.15	5.55	82	<0.01	37.2	18.7	0.5		1.41	1.2
FRDSMB	Finniss River Downstream Mount Burton	11/10/2012			452.7	7.29	214		261.08		<5			3100					<0.02	25.4	0.13	5.31	26	0.02	39	13	0.56		1.36	0.5
FRDSMB	Finniss River Downstream Mount Burton	6/11/2012			442.5	8.32	224		273.28		<5		3.1	3300				5.8	<0.02	25.7	0.12	4.85	26	0.02	39.9	11.3	0.39	0.8	1.25	0.6
FRDSMB	Finniss River Downstream Mount Burton	4/12/2012			112.6	7.45	40.2		49.044		<5			1200				165	<0.02	4.3	0.11	2.71	242	0.14	7.5	10.9	0.68		0.391	1.2
FRDSMB	Finniss River Downstream Mount Burton	3/01/2013			235	7.24	212		258.64		<5		3	1200				10.5	<0.02	11.6	0.07	1.99	148	0.06	16.9	16.7	0.31	1.1	0.366	0.4
FRDSMB	Finniss River Downstream Mount Burton	30/01/2013			150.3	7.71	64		78.08		<5		3.4	1000		5		19.8	<0.02	7.1	0.07	1.65	210	0.09	10.4	6.74	0.43	1	0.568	0.5
FRDSMB	Finniss River Downstream Mount Burton	11/02/2013		20.07	142.9	7.55																								
FRDSMB	Finniss River Downstream Mount Burton	26/02/2013		17.03	93.2	6.13	40		48.8		<5		3	900		4		33.8	<0.02	4.3	0.13	1.64	254	0.09	6.4	8.82	0.57	0.6	0.412	0.5
FRDSMB	Finniss River Downstream Mount Burton	11/03/2013		41.27	59.5	6.93																								
FRDSMB	Finniss River Downstream Mount Burton	26/03/2013		56.67	46.6	6.13	17.2		15		<5		1.8	400		7		76.4	<0.02	1.7	0.09	0.85	192	0.11	2.5	4.33	0.52	0.7	0.213	1.1
FRDSMB	Finniss River Downstream Mount Burton	8/04/2013		9.14	104	6.85																								
FRDSMB	Finniss River Downstream Mount Burton	23/04/2013		6.57	147.5	7.34	75		91.5		<5		3.2	1600		4		4.8	<0.02	8.1	0.22	3.83	140	0.04	12.9	12.1	0.45	0.5	0.388	0.9
FRDSMB	Finniss River Downstream Mount Burton	7/05/2013		3.32	250	7.74																								
FRDSMB	Finniss River Downstream Mount Burton	22/05/2013		8.71	223.3	7.6	101		123.22		<5		3.7	2300		5		22.8	<0.02	10.6	0.15	3.46	150	0.04	17.1	18.7	0.47	1.1	0.657	1
FRDSMB	Finniss River Downstream Mount Burton	3/06/2013		7.22	238.1	7.72																								
FRDSMB	Finniss River Downstream Mount Burton	17/06/2013		3.44	275.5	7.98			150		<5		3.4	2400		2		9.9	<0.02	16.3	0.11	3.22	218	0.02	25	14	0.36	0.6	1.11	0.5

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0			10.00	2000		10.00	500		20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13		2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																80	0.4				1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																55	0.2				1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
FRDSMB	Finniss River Downstream Mount Burton	1/07/2013		3.62	307.8	8.32																								
FRDSMB	Finniss River Downstream Mount Burton	15/07/2013		2.99	329.6	7.96	186		198		<5		3.1	2400		1		1.6	<0.02	20.6	0.15	4.41	36	0.02	31.9	21.2	0.38	0.6	1.7	0.7
FRDSMB	Finniss River Downstream Mount Burton	29/07/2013		2.08	393.4	8.14																								
FRDSMB	Finniss River Downstream Mount Burton	19/08/2013		2.22	428	7.9	205		212		<5		2.9	3100		3		7.9	<0.02	22.9	0.16	4.83	36	0.03	36.7	26.3	0.42	0.5	1.64	0.4
FRDSMB	Finniss River Downstream Mount Burton	26/08/2013		2.88	424.5	7.89																								
FRDSMB	Finniss River Downstream Mount Burton	9/09/2013		2.72	441.6	7.73	360		215		<5		3	2000		2		7.6	<0.02	24.5	0.11	3.23	54	<0.01	36.6	23	0.25	0.6	1.59	0.6
FRDSMB	Finniss River Downstream Mount Burton	23/09/2013		11.78	466.1	7.21																								
FRDSMB	Finniss River Downstream Mount Burton	7/10/2013		3.5	428	7.86	224		223		<5		3.2	2700		3		12.8	<0.02	26.3	0.09	3.53	24	<0.01	39.8	13.6	0.27	0.8	1.4	0.5
FRDSMB	Finniss River Downstream Mount Burton	21/10/2013		3.54	461.4	7.12																								
FRDSMB	Finniss River Downstream Mount Burton	5/11/2013		16.87	402.8	7.58	194		191		<5		3.4	3000				10.6	<0.02	24.4	0.3	17.8	22	0.04	34.9	23.8	0.98	1.2	2.33	0.6
FRDSMB	Finniss River Downstream Mount Burton	18/11/2013		25.43	115.1	6.73																								
FRDSMB	Finniss River Downstream Mount Burton	3/12/2013		12.57	174	7.24	82		82		<5		2.5	800		5		12.3	<0.02	9.1	0.11	1.59	242	0.12	13.3	19	0.38	1.6	0.465	0.6
FRDSMB	Finniss River Downstream Mount Burton	12/12/2013		18.23	129.8	7.36																								
FRDSMB	Finniss River Downstream Mount Burton	7/01/2014		12.77	131.5	7.56	59		59		<5		3.5	800		5		14.8	<0.02	6.4	0.09	0.85	274	0.06	9	12.7	0.28	0.9	0.329	<0.1
FRDSMB	Finniss River Downstream Mount Burton	20/01/2014		34.53	52.2	7.46																								
FRDSMB	Finniss River Downstream Mount Burton	4/02/2014		15.8	59.4	7.41	32.6		27		<5		1.6	800		6		62.4	0.04	3.4	0.6	19.7	150	1.32	4.3	9.19	2.84	0.6	0.264	180
FRDSMB	Finniss River Downstream Mount Burton	14/02/2014		40.83	59.7	7.49																								
FRDSMB	Finniss River Downstream Mount Burton	4/03/2014		10.52	123.1	8.58	47.6		53		<5		2.8	700		3		14.5	<0.02	5.7	0.27	3.97	158	0.13	8.3	10.4	0.5	0.4	0.321	0.9
FRDSMB	Finniss River Downstream Mount Burton	18/03/2014		10.12	126.1	7.37																								
FRDSMB	Finniss River Downstream Mount Burton	1/04/2014		4.72	204.9	8.21	88		107.36		<5		2.9	1300		3		7.2	<0.02	10.2	0.31	4.99	108	0.02	15.4	14.6	0.49	0.5	0.503	0.2
FRDSMB	Finniss River Downstream Mount Burton	28/04/2014		9.04	246.2	7.58	111		114		<5		3.3	1400		3		7.2	<0.02	12.8	0.24	4.68	166	0.03	19.7	19.4	0.48	0.7	0.694	0.3
FRDSMB	Finniss River Downstream Mount Burton	14/05/2014		5.92	242.9	7.68																								
FRDSMB	Finniss River Downstream Mount Burton	20/05/2014		3.55	296	7.27	148		140		<5		3.1	1300		3		4	<0.02	16	0.15	3.18	116	0.03	25.3	15.4	0.43	0.6	1.04	0.5
FRDSMB	Finniss River Downstream Mount Burton	27/05/2014			297.7	7.76	160		195.2		<5		3.1	1400				2.2	<0.02	16.2	0.16	3.95	80	0.02	25.1	15.7	0.42	0.5	1.12	0.5
FRDSMB	Finniss River Downstream Mount Burton	10/06/2014		5.35	318.7	7.09																								
FRDSMB	Finniss River Downstream Mount Burton	23/06/2014		3.41	320.2	8.22	176		189		<5		2.8	1700		1		1.8	<0.02	20.5	0.17	3.48	30	<0.01	31.8	25	0.54	0.5	1.58	0.4
FRDSMB	Finniss River Downstream Mount Burton	7/07/2014		4.25	367.6	7.04																								
FRDSMB	Finniss River Downstream Mount Burton	22/07/2014		2.68	337.5	7.99	188		201		<5		2.9	3300		2		1.5	<0.02	23.8	0.19	5.9	24	<0.01	37.9	16.7	0.58	0.5	1.5	0.5
FRDSMB	Finniss River Downstream Mount Burton	5/08/2014		3.43	397	7.77																								
FRDSMB	Finniss River Downstream Mount Burton	18/08/2014		2.21	387.1	7.67	222		209		<5		2.9	4100		2		1.7	<0.02	24	0.19	5.65	34	0.01	38.5	12.2	0.49	0.5	1.45	0.5
FRDSMB	Finniss River Downstream Mount Burton	1/09/2014		2.77	423.3	8.14																								
FRDSMB	Finniss River Downstream Mount Burton	16/09/2014		4.51		8.08	216		212		<5		2.9	3500		2		2.7	<0.02	23.9	0.2	5.07	30	0.01	38.7	22.5	0.44	0.6	1.49	0.5
FRDSMB	Finniss River Downstream Mount Burton	29/09/2014		2.87	467.4	7.9																								
FRDSMB	Finniss River Downstream Mount Burton	13/10/2014		3.45	474.2	8.09	236		201		<5		3.1	3000		2		4.4	<0.02	25.4	0.1	2.7	16	0.02	39.8	16	0.4	0.7	1.51	0.4
FRDSMB	Finniss River Downstream Mount Burton	27/10/2014		5.35	471.2	7.94																								
FRDSMB	Finniss River Downstream Mount Burton	11/11/2014		14.75	523	8.48	188		224		<5		3	5000		3		4.5	<0.02	24.3	0.08	4.84	10	<0.01	42	11.1	0.48	0.5	1.62	0.2
FRDSMB	Finniss River Downstream Mount Burton	25/11/2014		13.62	426.3	6.3																								
FRDSMB	Finniss River Downstream Mount Burton	6/01/2015		53.67	37.5	6.78	16.4		14		<5		1.9	600				117	<0.02	1.8	0.14	1.31	174	0.11	2.5	4.78	0.56	1	0.336	2.9
FRDSMB	Finniss River Downstream Mount Burton	20/01/2015		33.77	64.4	6.43																								
FRDSMB	Finniss River Downstream Mount Burton	3/02/2015		16.73	75.4	7.78	36		38		<5		2.7	600		4		33.8	<0.02	4.1	0.19	2.59	220	0.1	6	9.79	0.56	0.6	0.291	4.4
FRDSMB	Finniss River Downstream Mount Burton	17/02/2015		37.4		7.87																								
FRDSMB	Finniss River Downstream Mount Burton	4/03/2015		43.4	85.8	7.66	38		35		<5		2.4	600		5		46.8	<0.02	3.9	0.24	3.48	178	0.07	5.6	7.94	0.45	0.5	0.261	1.3
FRDSMB	Finniss River Downstream Mount Burton	18/03/2015		7.52	170.6	7.25																								
FRDSMB	Finniss River Downstream Mount Burton	1/04/2015		9.48	135.6	6.96	102		64		<5		2.9	1400		4		60.2	<0.02	7	0.5	7.26	174	0.08	10.7	21.1	0.68	0.2	0.446	2.9
FRDSMB	Finniss River Downstream Mount Burton	16/04/2015		6.5	233.6	6.87																								
FRDSMB	Finniss River Downstream Mount Burton	29/04/2015		4.7	314.1	7.62	140		139		<5		3.4	2100		3		9.3	<0.02	15.3	0.54	11.1	222	0.05	24.8	25.8	0.94	0.4	1.16	0.7
FRDSMB	Finniss River Downstream Mount Burton	13/05/2015			353.2	7.99																								
FRDSMB	Finniss River Downstream Mount Burton	27/05/2015		18.35	384.3	7.99	158		179		<5		3.1	2200		2		14.9	<0.02	20.7	0.25	6.49	12	0.01	33.2	24.3	0.64	0.5	1.85	0.7
FRDSMB	Finniss River Downstream Mount Burton	10/06/2015		6.26	381.6	8.05																								
FRDSMB	Finniss River Downstream Mount Burton	25/06/2015		6.11	403	7.79	18.2		198		3.3		2.9	2300		2		16.1	<0.02	22.2	0.19	1.78	2	0.02	35.6	21.4	0.53	0.6	1.87	1.5
FRDSMB	Finniss River Downstream Mount Burton	9/07/2015		3.99	410.2	7.49																								
FRDSMB	Finniss River Downstream Mount Burton	22/07/2015		4.35	352.3	7.49	118		198		<5		2.9	3600		2		22	<0.02	22.9	0.21	6.63	16	0.02	38.1	16.1	0.64	0.5	1.82	2.9
FRDSMB	Finniss River Downstream Mount Burton	5/08/2015		7.93	407.2	7.76																								
FRDSMB	Finniss River Downstream Mount Burton	18/08/2015		3.15	352.3	8.05	196		207		<5		3.2	3200		2		1.4	<0.02	25.5	0.17	5.3	42	<0.01	40.6	15.1	0.45	0.6	1.98	0.3
FRDSMB	Finniss River Downstream Mount Burton	2/09/2015		4.22	470.8	7.91																								
FRDSMB	Finniss River Downstream Mount Burton	15/09/2015		6	471.6	79.9	210		220		<5		3.1	3200		2		1.7	<0.02	24.1	0.13	4.55	40	0.02	38.7	22.4	0.4	0.6	1.84	0.4
FRDSMB	Finniss River Downstream Mount Burton	13/10/2015		3.91	474.1	8.01	210		229		<5		3.3	5700		5		1.4	<0.02	24.7	0.16	5.82	2	<0.01	44.6	20	0.54	1	1.36	0.2
FRDSMB	Finniss River Downstream Mount Burton	28/10/2015		5.22	392.1	7.91																								
FRDSMB	Finniss River Downstream Mount Burton	9/11/2015		4.05	490.6	7.97			204		<5		3.4	4200		3		1.6	<0.02	26	0.11	6.65	10	<0.01	43	14.1	0.65	1.1	1.81	0.5
FRDSMB	Finniss River Downstream Mount Burton	25/11/2015		4.3	512.3	8.07																								
FRDSMB	Finniss River Downstream Mount Burton	10/12/2015		7.92	466.8	8.07	210		184		<5		3.1	3300		6		2.2	<0.02	23.2	0.16	9.34	18	0.02	35.8	9.53	0.86	1.2	2	0.4
FRDSMB	Finniss River Downstream Mount Burton	22/12/2015		11.23	373	7.94																								
FRDSMB	Finniss River Downstream Mount Burton	5/01/2016		25.43	85.3	7.62	32.8		32		<5		3	500		8		18.7	<0.02	3.5	0.18	2.08	410	0.09	6	12.2	0.64	1.1	0.387	1.5
FRDSMB	Finniss River Downstream Mount Burton	21/01/2016		31.2	79.9	7.51																								
FRDSMB	Finniss River Downstream Mount Burton	3/02/2016		16.8	65	7.36	29.6		27		2.1		2.4	600		5		31.3	<0.02	3.4	0.22	2.96	174	0.07	4.9	9.32	0.51	0.5	0.296	0.8
FRDSMB	Finniss River Downstream Mount Burton	17/02/2016		13.38	75	7.3																								
FRDSMB	Finniss River Downstream Mount Burton	1/03/2016		14.8	105.3	7.49	47		47		<5		2.4	800		3		13.2	<0.02	5	0.2	3.71	156	0.05	7.9	13.2	0.46	0.6	0.267	0.4
FRDSMB	Finniss River Downstream Mount Burton	17/03/2016		11.78	98.6	7.3																								
FRDSMB	Finniss River Downstream Mount Burton	29/03/2016		8.77	115.5	7.03	58		47		<5		3	800		4		10.4	<0.02	5.2	0.15	2.66	216	0.05	8.4	11.5	0.37	0.5	0.256	1.4
FRDSMB	Finniss River Downstream Mount Burton	12/04/2016		7.26	182.6	7.68																								
FRDSMB	Finniss River Downstream Mount Burton	26/04/2016		7.7	259.1	7.71	100		117		<5		3.3	1900		3		6.2	<0.02	13.1	0.19	3.83	94	0.01	20.9	22.4	0.45	0.5	0.785	0.7
FRDSMB	Finniss River Downstream Mount Burton	13/05/2016		35.63	128.6	6.86																								
FRDSMB	Finniss River Downstream Mount Burton	23/05/2016		7.44	222.4	7.13	100		112		<5		2.8	1500		3		10.9	<0.02	12.8	0.14	3.58	110	0.03	20.7	25.9	0.41	1	0.672	1
FRDSMB	Finniss River Downstream Mount Burton	7/06/2016		5.52	326.3	7.24																								

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRDSMB	Finniss River Downstream Mount Burton	20/06/2016		5.59	382.7	6.44	160		177		<5		3	2400		3		16.5	<0.02	20	0.18	4.15	42	0.01	32.2	24.5	0.42	0.6	1.74	0.8
FRDSMB	Finniss River Downstream Mount Burton	7/07/2016		2.84	433.1	7.5																							
FRDSMB	Finniss River Downstream Mount Burton	20/07/2016		2.16	455	7.49	196		189		<5		3	2600		4		14.8	<0.02	22.4	0.23	6.65	56	0.02	35.8	20.8	0.57	0.6	2.35	0.6
FRDSMB	Finniss River Downstream Mount Burton	17/08/2016		3.84	434.9	7.83	166		215		<5		3	4400		2		19.1	<0.02	23.2	0.22	6.72	24	0.02	39.2	20.3	0.55	0.5	2.02	0.7
FRDSMB	Finniss River Downstream Mount Burton	29/08/2016		7.33	419.3	7.58																							
FRDSMB	Finniss River Downstream Mount Burton	5/04/2017			105.02	6.64		48		2.1		7.7	2.8	600			43.8	36.9	<0.02	5	0.26	3.59	156	0.07	7.57.6	13.6	0.48	0.4	0.226	3
FRDSMB	Finniss River Downstream Mount Burton	27/04/2017			141.82	6.68		79		2.7		7.9	3.1	1100			74.7	29.8	<0.02	8.4	0.37	5.31	110	0.05	13.1	22.2	0.71	0.5	0.388	2.2
FRDSMB	Finniss River Downstream Mount Burton	30/05/2017	104		178.28	6.93		149		3.1		8	3.3	1300		1.9	146	7.6	<0.02	16.1	0.27	5.45	60	0.03	25.6	28.7	0.54	0.5	1.01	1.3
FRDSMB	Finniss River Downstream Mount Burton	30/05/2017			311.05	7.08																							
FRDSMB	Finniss River Downstream Mount Burton	7/06/2017			398.71	6.72																							
FRDSMB	Finniss River Downstream Mount Burton	20/06/2017			422.17	6.4		196		3.5		8.2	3	3300		1.6	195	5.6	<0.02	20.8	0.33	8.64	56	0.03	34.7	26.2	0.89	0.6	1.49	2.2
FRDSMB	Finniss River Downstream Mount Burton	4/07/2017			443.77	7.75																							
FRDSMB	Finniss River Downstream Mount Burton	18/07/2017	244		303.68	7.58		206		3.3		8.2	3.1	2200		1.9	204	7.7	<0.02	22.9	0.19	4.09	28	<0.01	35.7	23.9	0.41	0.7	1.65	0.7
FRDSMB	Finniss River Downstream Mount Burton	2/08/2017			422.33	7.56																							
FRDSMB	Finniss River Downstream Mount Burton	15/08/2017	168		437.81	7.69		218		3.5		8.2	3	3300		1.8	215	11.8	<0.02	23.8	0.19	5.26	38	0.02	37.8	25.7	0.47	0.5	1.47	0.7
FRDSMB	Finniss River Downstream Mount Burton	29/08/2017			429.01	7.68																							
FRDSMB	Finniss River Downstream Mount Burton	12/09/2017	212		422.47	7.33		216		3.7		8.2	2.7	4200		2.3	217	8.8	<0.02	23.2	0.19	5.88	34	0.09	38.6	25.6	0.62	0.6	1.63	2.2
FRDSMB	Finniss River Downstream Mount Burton	28/09/2017			426.49	7.25																							
FRDSMB	Finniss River Downstream Mount Burton	11/10/2017	164		453.5	8.02		208		3.7		8.5	2.9	4100		2.5	226	30.9	<0.02	24.5	0.38	5.21	26	0.02	39.9	28.2	0.71	0.6	1.54	3.5
FRDSMB	Finniss River Downstream Mount Burton	23/10/2017			448.67	7.85																							
FRDSMB	Finniss River Downstream Mount Burton	8/11/2017	164		425	7.83		197		3.7		8.3	3	3000			204	14.2	<0.02	23.9	0.2	5.65	46	0.03	35	19.2	0.54	0.9	1.65	1.2
FRDSMB	Finniss River Downstream Mount Burton	23/11/2017			385.52	7.9																							
FRDSMB	Finniss River Downstream Mount Burton	6/12/2017	13		296.59	7.79		143		3.8		8	2.8	2900			140	26.3	<0.02	16.4	0.11	2.97	62	0.04	24	18	0.36	1.2	0.937	1.8
FRDSMB	Finniss River Downstream Mount Burton	21/12/2017			330.94	7.77																							
FRDSMB	Finniss River Downstream Mount Burton	4/01/2018	250		299	7.78		175		3.3		8.2	3	1900			162	34.9	<0.02	19.5	0.09	2.39	32	0.03	27.4	8.92	0.31	0.8	1.43	2.4
FRDSMB	Finniss River Downstream Mount Burton	18/01/2018	29.4		66.98	6.77																							
FRDSMB	Finniss River Downstream Mount Burton	1/03/2018	51		93.65	7.72		43		3.1		7.8	2.3	700		3	40.1	34.5	<0.02	5	0.23	2.65	190	0.07	6.7	8.47	0.62	0.4	0.33	2.5
FRDSMB	Finniss River Downstream Mount Burton	15/03/2018			81	7.2																							
FRDSMB	Finniss River Downstream Mount Burton	11/04/2018			83.99	7.29																							
FRDSMB	Finniss River Downstream Mount Burton	27/04/2018	88		149.94	7.84		86		2.7		7.8	3	1800		2.9	84.8	46	<0.02	9.7	0.27	3.92	134	0.04	14.7	24.2	0.52	0.6	0.547	2.6
FRDSMB	Finniss River Downstream Mount Burton	17/07/2018			870	7.87				3.5			2.9	3600	220	4	200	89	<0.02	21.6	0.26	5.87	28	0.02	35.5	21.3	0.59	0.5	1.51	3.3
FRDSMB	Finniss River Downstream Mount Burton	15/08/2018			382.1	6.04		205		3.2		8.2	3	2200	210	6	207	52.9	<0.02	23.8	0.17	2.52	22	0.04	35.7	21.9	0.38	0.6	1.62	4.5
FRDSMB	Finniss River Downstream Mount Burton	11/09/2018			1167	7.05		212		3.5		8.3	3	2600	230	3	216	13.2	<0.02	24.5	0.15	2.65	40	0.03	37.5	30.5	0.32	0.6	1.45	0.9
FRDSMB	Finniss River Downstream Mount Burton	17/10/2018			430.1	7.35		219		3.5		8.1	3.2	2100	270	<1	222	21.4	<0.02	25.7	0.12	2.3	28	0.03	38.4	24.5	0.33	1	1.36	1.3
FRDSMB	Finniss River Downstream Mount Burton	7/11/2018			341.1	7.99		217		2		8.2	3.1	2900	220	8	224	79	<0.02	25.8	0.1	3.04	18	0.05	38.7	14.8	0.32	0.9	1.27	3.4
FRDSMB	Finniss River Downstream Mount Burton	3/12/2018			127.55	7.34		58		4		7.5	2.3	1800	90	7	58.6	105	<0.02	6.1	0.14	3.27	270	0.17	10.5	25.3	0.48	2.1	0.45	2.1
FRDSMB	Finniss River Downstream Mount Burton	5/02/2019			48.03	6.29		22		2.5		7.6	2.5	700	40	5	20.6	163	<0.02	2.5	0.1	1.36	310	0.16	3.5	3.69	0.5	0.9	0.328	1.4
FRDSMB	Finniss River Downstream Mount Burton	18/03/2019			165.41	6.03		72		2		7.8	3.2	400	90	4	72.5	31	<0.02	8.6	0.12	0.62	250	0.09	12.4	29.7	0.29	1.1	0.282	0.8
FRDSMB	Finniss River Downstream Mount Burton	8/04/2019			85.82	7.21		33		2		7.4	2.4	500	40	3	30.3	58.6	0.02	3.4	0.1	1.22	152	0.09	5.3	9.1	0.5	0.8	0.291	8.2
FRDSMB	Finniss River Downstream Mount Burton	23/07/2019			340.7	8.26		194		4			3.3	2900	200	1	198	40.9	<0.02	21.8	0.13	2.72	16	<0.01	34.9	21.7	0.3	0.7	1.72	2.4
No. of samples			11.0	87.0	135.0	137.0	57.0	22.0	59.0	23.0	57.0	21.0	76.0	82.0	10.0	62.0	23.0	77.0	82.0	81.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	76.0	82.0	81.0
Minimum			13.0	2.1	37.5	6.0	16.4	22.0	14.0	2.0	2.1	7.4	1.6	400.0	40.0	1.0	20.6	1.4	0.0	1.7	0.1	0.6	2.0	0.0	2.5	3.7	0.3	0.2	0.2	0.2
Maximum			250.0	56.7	1167.0	79.9	360.0	219.0	273.3	4.0	3.3	8.5	3.7	5700.0	270.0	8.0	226.0	165.0	0.1	26.3	0.6	19.7	420.0	1.3	44.6	30.5	2.8	2.1	2.4	180.0
Mean			135.2	11.7	296.0	8.0	134.1	145.3	147.9	3.1	2.7	8.0	2.9	2113.4	161.0	3.4	147.9	26.2	0.0	15.9	0.2	4.6	106.5	0.1	25.3	17.0	0.6	0.7	1.1	3.6
Standard Deviation			83.7	12.1	170.4	6.2	77.5	73.6	78.0	0.7	0.8	0.3	0.4	1197.6	86.2	1.7	75.2	33.4	0.0	8.4	0.1	3.1	95.9	0.2	13.3	6.7	0.3	0.3	0.6	20.0
80th Percentile			212.0	16.8	428.2	7.9	209.0	211.2	215.0	3.7	3.1	8.2	3.2	3180.0	222.0	5.0	215.6	36.5	0.1	24.0	0.2	5.9	179.6	0.1	38.1	23.9	0.6	0.9	1.6	2.2
FRUSEB	Finniss River Upstream East Branch	25/07/2012			340.2	7.91	184		224.48				3.4	1800				1.9	<0.02		0.06	2.14	26	0.01	35.1	7.61	0.42	0.6	1.52	1.6
FRUSEB	Finniss River Upstream East Branch	30/01/2013			143	7.78	55		67.1		<5		3.2	1500				25.8	<0.02	6.8	0.14	1.96	230	0.12	9.5	7.26	0.65	1	0.595	5.7
FRUSEB	Finniss River Upstream East Branch	11/02/2013		18.57	143.6	7.37																							
FRUSEB	Finniss River Upstream East Branch	26/02/2013		19.33	89.3	6.15	37		45.14		<5		2.9	1000		5		46.1	<0.02	4.1	0.12	1.31	268	0.1	5.9	8.61	0.62	0.5	0.389	0.4
FRUSEB	Finniss River Upstream East Branch	11/03/2013		35.17	62.8	7																							
FRUSEB	Finniss River Upstream East Branch	26/03/2013		63.8	45	6.25	16.6		15		<5		1.8	500				79.8	<0.02	1.7	0.08	1.53	224	0.12	2.4	4.01	0.54	0.6	0.202	1.8
FRUSEB	Finniss River Upstream East Branch	8/04/2013		9.6	98.7	6.69																							
FRUSEB	Finniss River Upstream East Branch	23/04/2013		6.08	141.6	7.25	72		87.84		<5		3.2	1400		3		4.5	<0.02	7.8	0.12	2.06	124	0.03	12.2	14.3	0.3	0.5	0.359	0.6
FRUSEB	Finniss River Upstream East Branch	7/05/2013		3.8	238.4	7.4																							
FRUSEB	Finniss River Upstream East Branch	22/05/2013		9.35	195.9	7.4	83		101.26		5		3.8	3200		4		22.3	<0.02	9	0.14	2.15	134	0.05	14.5	19.4	0.46	1.3	0.533	5.1
FRUSEB	Finniss River Upstream East Branch	3/06/2013		7.97	222.5	7.46																							
FRUSEB	Finniss River Upstream East Branch	17/06/2013		3.63	263.4	7.61	126.4		138		<5		3.5	2200		2		10.8	<0.02	15.4	0.08	1.69	250	0.03	23	12.3	0.27	0.7	1.11	0.6
FRUSEB	Finniss River Upstream East Branch	1/07/2013		3.43	293.2	7.95																							
FRUSEB	Finniss River Upstream East Branch	15/07/2013		2.46	314	7.8	260		188		<5		3.3	2100		2		1.6	<0.02	19.2	0.09	1.83	26	<0.01	29.5	23.7	0.21	0.6	1.83	0.5
FRUSEB	Finniss River Upstream East Branch	29/07/2013		1.65	383	7.94																							
FRUSEB	Finniss River Upstream East Branch	19/08/2013		2.05	412.2	7.66	192		208		<5		3	1900		4		8	<0.02	23	0.11	1.3	16	<0.01	35.3	34	0.21	0.6	2.04	0.3
FRUSEB	Finniss River Upstream East Branch	9/09/2013		1.68	434.3	7.17	100		217		<5		3.1	1800		2		6.4	<0.02	24.1	0.09	1.59	28	<0.01	36.5	50.6	0.21	0.6	1.93	0.6
FRUSEB	Finniss River Upstream East Branch	23/09/2013		20.53	488.2	6.73																							
FRUSEB	Finniss River Upstream East Branch	7/10/2013		3.05	424.5	7.61	222		221		<5		3.3	1600		3		12.6	<0.02	25.1	0.11	1.96	38	0.03	37.6	43.2	0.27	0.9	1.68	0.9
FRUSEB	Finniss River Upstream East Branch	21/10/2013		1.78	451.1	6.68																							
FRUSEB	Finniss River Upstream East Branch	5/11/2013		2.11	421	6.68	156		201		<5		3.3	2100				9.5	<0.02	24.3	0.08	5.09	46	0.37	37.6	23.9	0.29	1	1.91	1.5
FRUSEB	Finniss River Upstream East Branch	18/11/2013		19.5	109.5	6.77																							
FRUSEB	Finniss River Upstream East Branch	3/12/2013		14.97	132.1	7.04	54		58		<5		2.5	1000		6		34.5	<0.02	6.2	0.09	3.68	458	0.17	9.5	21.8	0.48	1.9	0.274	1.9
FRUSEB	Finniss River Upstream East Branch	12/12/2013		19.73	103.5	7.23																							
FRUSEB	Finniss River Upstream East Branch	7/01/2014		12.8	129	7.59	52.6		57		<5		3.5	900		5		17.7	<0.02	6.2	0.1	2.22	288	0.08	8.8	16.1	0.33	0.9	0.306	<0.1
FRUSEB	Finniss River Upstream East Branch	20/01/2014		36.93	31.5	7.5																							

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100						3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRUSEB	Finniss River Upstream East Branch	4/02/2014		14.73	29.7	7.3	12.2		9		<5		1.4	400		4		45.8	<0.02	1.5	0.09	1.51	130	0.18	1.7	2.97	0.36	0.6	0.141	4.1
FRUSEB	Finniss River Upstream East Branch	14/02/2014		42.53	63.5	7.16																								
FRUSEB	Finniss River Upstream East Branch	4/03/2014		11.36	117.8	7.92	51.4		50		<5		2.8	700		3		15.3	<0.02	5.4	0.14	2.5	160	0.1	7.9	10.6	0.35	0.4	0.263	0.5
FRUSEB	Finniss River Upstream East Branch	18/03/2014		11.24	120.9	7.17																								
FRUSEB	Finniss River Upstream East Branch	1/04/2014		5.93	192.5	7.46	69		84.18		<5		2.9	1300		3		8.3	<0.02	9.7	0.14	2.64	188	0.04	14.4	17.4	0.33	0.5	0.48	0.3
FRUSEB	Finniss River Upstream East Branch	28/04/2014		8.8	229	7.35	105		105		<5		3.2	1400		2		7.6	<0.02	12	0.13	2.49	164	0.04	18.5	21.6	0.36	0.7	0.716	0.4
FRUSEB	Finniss River Upstream East Branch	14/05/2014		4.73	233.6	7.87																								
FRUSEB	Finniss River Upstream East Branch	27/05/2014			298.5	7.81	148		180.56		<5		3	1300				3.1	<0.02	15.9	0.06	2.17	64	0.04	24.2	9.92	0.28	0.6	1.35	0.6
FRUSEB	Finniss River Upstream East Branch	10/06/2014		11.52	304.2	8.14																								
FRUSEB	Finniss River Upstream East Branch	23/06/2014		8.27	310.2	7.94	192		181		<5		3	1800		2		1.8	<0.02	20	0.1	2.36	24	0.02	31.4	17.7	0.25	0.6	1.93	0.3
FRUSEB	Finniss River Upstream East Branch	7/07/2014		14.7	351.8	6.25																								
FRUSEB	Finniss River Upstream East Branch	22/07/2014		17.42	337.8	7.77	184		196		<5		3.1	2000		2		1.4	<0.02	23.7	0.08	1.51	16	0.01	35.9	17.1	0.24	0.6	1.99	0.4
FRUSEB	Finniss River Upstream East Branch	5/08/2014		10.83	416.7	7.58																								
FRUSEB	Finniss River Upstream East Branch	18/08/2014		10.53	361.6	7.31	202		206		<5		3.1	2100		2		5.2	0.02	24.5	0.13	1.84	18	0.2	36.8	15.4	0.6	0.6	2.14	4.9
FRUSEB	Finniss River Upstream East Branch	1/09/2014		3.19	399.1	8.05																								
FRUSEB	Finniss River Upstream East Branch	16/09/2014		4.23		7.92	218		212		<5		3	2100		3		2.6	<0.02	24	0.11	1.23	22	<0.01	38	42.5	0.35	0.7	2.19	0.4
FRUSEB	Finniss River Upstream East Branch	29/09/2014		7.61	466.1	7.43																								
FRUSEB	Finniss River Upstream East Branch	13/10/2014		4.29	455.1	7.44	236		203		<5		3.1	2000		3		5.9	<0.02	25.1	0.12	1.18	24	0.04	40.1	55.9	0.4	0.7	2.14	1.1
FRUSEB	Finniss River Upstream East Branch	27/10/2014		7.03	468.3	7.89																								
FRUSEB	Finniss River Upstream East Branch	11/11/2014		3.09	488.9	7.97	380		224		<5		3.3	1900		4		6.9	<0.02	24.7	0.11	0.9	28	0.09	40.4	39.2	0.56	1	2.02	5.7
FRUSEB	Finniss River Upstream East Branch	25/11/2014		2.9	448	7.59																								
FRUSEB	Finniss River Upstream East Branch	10/12/2014		4.29	425.8	7.63	208		229		<5		3.2	3100		5		11	<0.02	23.8	0.08	1.02	36	0.04	39.2	28.6	0.46	0.9	1.89	0.5
FRUSEB	Finniss River Upstream East Branch	6/01/2015		45.93	43.2	5.83	14		14		<5		2.2	700				115	<0.02	1.9	0.17	2.85	206	0.26	2.7	5.48	0.83	1.1	0.37	7.8
FRUSEB	Finniss River Upstream East Branch	20/01/2015		101.67	68.2	6.89																								
FRUSEB	Finniss River Upstream East Branch	3/02/2015		26.87	66.9	6.13	32		31		<5		2.4	600		6		71.1	<0.02	3.4	0.13	1.75	278	0.17	4.9	8.95	0.55	0.7	0.301	10.5
FRUSEB	Finniss River Upstream East Branch	17/02/2015		46.1		7.4																								
FRUSEB	Finniss River Upstream East Branch	4/03/2015		43.23	64.8	8	30.8		26		<5		2.1	500		5		69.7	<0.02	3	0.16	1.87	206	0.08	4.2	6.66	0.39	0.5	0.221	1.6
FRUSEB	Finniss River Upstream East Branch	18/03/2015		25.07	162.3	7.82																								
FRUSEB	Finniss River Upstream East Branch	1/04/2015		21.67	122.3	6.47	60		55		<5		2.8	1300		5		64.9	<0.02	5.9	0.4	3.96	198	0.09	8.9	24.8	0.6	0.2	0.382	2.1
FRUSEB	Finniss River Upstream East Branch	16/04/2015		17.84	228.1	7.53																								
FRUSEB	Finniss River Upstream East Branch	29/04/2015		18.55	308.5	7.46	130		135		<5		3.4	2200		3		9.3	<0.02	14.5	0.32	5.44	124	0.05	23	27.6	0.54	0.5	1.29	0.9
FRUSEB	Finniss River Upstream East Branch	13/05/2015			337.8	7.73																								
FRUSEB	Finniss River Upstream East Branch	27/05/2015		5.99	358.8	7.43	156		167		<5		3.2	2000		2		17.2	<0.02	19.4	0.17	2.74	14	<0.01	31.4	30.3	0.4	0.5	2.02	0.8
FRUSEB	Finniss River Upstream East Branch	10/06/2015		12.3	369.9	7.72																								
FRUSEB	Finniss River Upstream East Branch	24/06/2015		3.92	758.2	7.55	200		196		3.3		3.1	3700		3		12.7	<0.02	22.4	0.14	1.89	22	0.02	35.6	26.3	0.42	0.5	2.42	1.7
FRUSEB	Finniss River Upstream East Branch	9/07/2015		7.53	426.8	7.7																								
FRUSEB	Finniss River Upstream East Branch	22/07/2015		8.27	350.4	7.02	160		200		<5		3.1	2800		2		6.4	<0.02	23.1	0.55	3.53	24	<0.01	37.4	16.1	0.79	0.6	2.46	0.6
FRUSEB	Finniss River Upstream East Branch	5/08/2015		5.78	402.7	7.11																								
FRUSEB	Finniss River Upstream East Branch	18/08/2015		3.12	346.2	7.62	196		210		<5		3.3	2700		2		4.7	<0.1	25.1	0.23	2.4	44	<0.05	41	27.1	0.48	0.6	2.61	1.7
FRUSEB	Finniss River Upstream East Branch	2/09/2015		5.21	445	7.62																								
FRUSEB	Finniss River Upstream East Branch	15/09/2015		2.26	463.3	7.72	534		229		<5		3.2	2000		3		1.7	<0.02	23.6	0.14	0.96	40	<0.01	38.6	119	0.33	0.7	2.09	0.2
FRUSEB	Finniss River Upstream East Branch	13/10/2015		2.38	482.8	7.78	220		231		<5		3.5	2100		5		1.5	<0.02	24.9	0.13	0.65	32	0.01	43.4	84.6	0.38	1	2.16	0.2
FRUSEB	Finniss River Upstream East Branch	28/10/2015		2.56	390.8	6.92																								
FRUSEB	Finniss River Upstream East Branch	9/11/2015		1.41	503.2	7.99	214		218		<5		3.6	2300		3		1.3	<0.02	25.8	0.13	0.69	20	<0.01	44.3	63	0.5	1.2	2.19	1.1
FRUSEB	Finniss River Upstream East Branch	25/11/2015		1.8	464.4	7.89																								
FRUSEB	Finniss River Upstream East Branch	10/12/2015		9.28	474.8	7.86	230		192		<5		3	3200		18		3	<0.02	20.6	0.1	1.35	10	0.01	38.2	32.5	0.41	1.2	2.54	0.3
FRUSEB	Finniss River Upstream East Branch	22/12/2015		10.7	363.7	7.61																								
FRUSEB	Finniss River Upstream East Branch	5/01/2016		12.3	109	7.34	78		44		<5		2.9	1000		11		21.3	<0.02	5.3	0.18	2.88	350	0.11	8.1	12.6	0.6	1	0.484	1.5
FRUSEB	Finniss River Upstream East Branch	21/01/2016		86.6	66.1	7.44																								
FRUSEB	Finniss River Upstream East Branch	3/02/2016		19.88	61.1	7.1	25.8		24		2		2.3	700		5		35.5	<0.02	3	0.54	2.04	206	0.09	4.3	20.4	0.6	0.5	0.377	1
FRUSEB	Finniss River Upstream East Branch	17/02/2016		16.21	65.9	6.86																								
FRUSEB	Finniss River Upstream East Branch	1/03/2016		56.07	101.8	7.47	44.4		45		<5		2.4	700		4		27.5	<0.02	4.3	0.2	2.35	250	0.1	7	17.1	0.37	0.6	0.243	0.5
FRUSEB	Finniss River Upstream East Branch	17/03/2016		12.33	96.6	7.22																								
FRUSEB	Finniss River Upstream East Branch	29/03/2016		9.81	115.6	7.51	46		49		<5		3	700		4		8.1	<0.02	5.7	0.13	1.42	250	0.05	8.3	13.8	0.25	0.4	0.254	0.6
FRUSEB	Finniss River Upstream East Branch	12/04/2016		56.17	173.9	7.6																								
FRUSEB	Finniss River Upstream East Branch	26/04/2016		26	245.2	7.64	100		110		<5		3.3	2000		4		5.4	<0.02	12.4	0.11	2.11	266	0.05	19.3	24.9	0.31	0.6	0.817	0.4
FRUSEB	Finniss River Upstream East Branch	13/05/2016		24.73	111.6	6.6																								
FRUSEB	Finniss River Upstream East Branch	23/05/2016		6.16	159.7	7.32	80		90		<5		2.8	1300		4		4.7	<0.02	10.4	0.08	2.07	106	0.03	16.9	31.5	0.32	1	0.493	0.6
FRUSEB	Finniss River Upstream East Branch	7/06/2016		4.99	296.1	7.13																								
FRUSEB	Finniss River Upstream East Branch	20/06/2016		4.09	354.7	7.61	122		155		<5		3	1900		3		9.6	<0.02	18.1	0.11	1.42	30	0.02	28.8	34.6	0.28	0.8	1.8	0.5
FRUSEB	Finniss River Upstream East Branch	7/07/2016		5.93	372.3	7.26																								
FRUSEB	Finniss River Upstream East Branch	20/07/2016		3.81	396.5	7.46	182		168		<5		2.9	3100		6		8.7	<0.02	19.7	0.13	4.75	36	0.15	31.9	23.6	0.8	0.7	2.6	3.8
FRUSEB	Finniss River Upstream East Branch	5/08/2016		3.64	415.9	6.86																								
FRUSEB	Finniss River Upstream East Branch	17/08/2016		6.18	385.5	7.49	182		209		<5		3.1	2400		3		17.9	<0.02	22.6	0.1	1.29	14	0.01	36.9	33.8	0.26	0.7	2.77	0.8
FRUSEB	Finniss River Upstream East Branch	29/08/2016		2.52	409.7	6.9																								
FRUSEB	Finniss River Upstream East Branch	31/01/2017	13.4		40.2	6.62							1.6	300		6		71.2	<0.02	1.6	0.08	0.96	220	0.1	2.2	3.4	0.34	0.5	0.174	2.7
FRUSEB	Finniss River Upstream East Branch	27/02/2017		126	130.1	6.89				2.2	7.4	2.8	800		53.5			91.5	<0.02	6.2	0.31	33.9	466	0.24	9.2	19.3	0.65	0.3	1.5	8.6
FRUSEB	Finniss River Upstream East Branch	4/04/2017			83.61	8.01		42		2.1	7.6	2.7	600		38.4			56.4	<0.02	4.4 4.5	0.32	2.45	206	0.11	6.6 6.7	38.7	0.46	0.4	0.247	5.7
FRUSEB	Finniss River Upstream East Branch	11/04/2017			139.49	6.47																								
FRUSEB	Finniss River Upstream East Branch	26/04/2017	84		156.04	7.59		73		2.7	7.9	3	1000		66.5			26.7	<0.02	7.5	0.27	2.89	122	0.05	11.6	28.6	0.41	0.5	0.431	2.1
FRUSEB	Finniss River Upstream East Branch	29/05/2017			275.48	6.95		141		3.1	7.9	3.3	1500		138			9.3	<0.02	15.3	0.14	3.89	22	0.03	24.3	32.9	0.32	0.7	1.97	0.9
FRUSEB	Finniss River Upstream East Branch	7/06/2017			589.75	6.28																								
FRUSEB	Finniss River Upstream East Branch	20/06/2017			385.55	7.67		174		3.3	8	3.2	2600		176			4.2	<0.02	19.6	0.23	1.98	26	0.04	30.7	31.2	0.36	0.6	1.67	1.3
FRUSEB	Finniss River Upstream East Branch	4/07/2017			407.16	7.15																								

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0			10.00	2000		10.00	500		20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRUSEB	Finniss River Upstream East Branch	17/07/2017	146		414.61	7.54		198		3.2		8	3.1	1900		2.9	198	683	<0.02	22.5	0.16	3.52	22	0.15	34.5	38.8	0.35	0.7	4.46	1.2
FRUSEB	Finniss River Upstream East Branch	2/08/2017			400.85	6.84																								
FRUSEB	Finniss River Upstream East Branch	15/08/2017	214		432.52	7.56		215		3.4		8	3	1900		2	210	12.9	<0.02	23.7	0.11	1.35	10	0.02	36.5	36.4	0.23	0.6	1.91	0.8
FRUSEB	Finniss River Upstream East Branch	28/08/2017			420.36	7.33																								
FRUSEB	Finniss River Upstream East Branch	12/09/2017	214		435.49	7.06		213		2.2		8	2.9	2100		2.7	214	7	<0.02	23.5	0.14	1.02	40	0.02	37.7	61.9	0.29	0.7	2.38	0.9
FRUSEB	Finniss River Upstream East Branch	28/09/2017			432.86	6.9																								
FRUSEB	Finniss River Upstream East Branch	11/10/2017	272		440.7	7.78		217		3.6		8.3	3.1	2100		3.1	230	31.8	<0.02	25.4	0.15	1.33	32	0.01	40.6	70.9	0.35	0.7	1.96	2.5
FRUSEB	Finniss River Upstream East Branch	23/10/2017			458.17	7.6																								
FRUSEB	Finniss River Upstream East Branch	9/11/2017	150		434.96	7.65		204		3.7		8.2	3.1	2100			208	14.9	<0.02	23.8	0.09	0.91	38	0.03	36.2	37.5	0.24	0.9	1.79	1.3
FRUSEB	Finniss River Upstream East Branch	23/11/2017			400.75	7.9																								
FRUSEB	Finniss River Upstream East Branch	6/12/2017	152		315.67	7.76		157		3.9		8.1	2.9	1600			150	37.4	<0.02	17.9	0.22	2.34	80	0.07	25.7	26.5	0.44	1.3	1.13	2.9
FRUSEB	Finniss River Upstream East Branch	20/12/2017			302.29	7.63																								
FRUSEB	Finniss River Upstream East Branch	3/01/2018	222		338.5	7.63		173		3.3		8	3.1	1100			161	16.9	<0.02	19.6	0.08	1.25	36	0.02	27.3	12.4	0.29	0.9	1.53	1.4
FRUSEB	Finniss River Upstream East Branch	18/01/2018	25.8		64.72	6.92																								
FRUSEB	Finniss River Upstream East Branch	15/02/2018			30.06	6.77																								
FRUSEB	Finniss River Upstream East Branch	2/03/2018	36.2		86.18	7.3		38		1.9		7.9	2.3	600		3	34.9	36.7	<0.02	4.2	0.15	2	214	0.07	5.9	9.09	0.35	0.4	0.229	1.9
FRUSEB	Finniss River Upstream East Branch	15/03/2018			75.16	7.14																								
FRUSEB	Finniss River Upstream East Branch	11/04/2018			73.97	7.27																								
FRUSEB	Finniss River Upstream East Branch	18/07/2018			54.7	5.89				3.3			3	2200	200	4.2	189	62.3	<0.02	21.3	0.16	1.95	22	0.01	32.9	27.8	0.51	0.7	2.07	2.3
FRUSEB	Finniss River Upstream East Branch	15/08/2018						208		3.2		8.1	3	1700	220	6	204	40.5	<0.02	23.3	0.11	1.28	16	0.04	35.4	28.1	0.3	0.7	1.98	4.1
FRUSEB	Finniss River Upstream East Branch	15/08/2018			370.26	7.12																								
FRUSEB	Finniss River Upstream East Branch	11/09/2018			1185	7.04		208		3.6		8.2	3.1	1900	240	2	215	14.5	<0.02	24.6	0.12	1.02	34	0.03	37.2	68	0.25	0.7	2.06	1.3
FRUSEB	Finniss River Upstream East Branch	17/10/2018			459.47	7.27		205		3.8		8.3	3.1	1600	280	1	222	20.5	<0.02	24.9	0.1	1.12	42	0.1	38.9	51.1	0.5	0.9	1.63	5.2
FRUSEB	Finniss River Upstream East Branch	7/11/2018			334.2	7.69		217		4		8.2	3.2	1800	220	8	225	100	0.02	25.4	0.09	0.59	34	0.05	39.2	42.2	0.23	1	1.57	3.2
FRUSEB	Finniss River Upstream East Branch	3/12/2018			121.39	7.16		35		4		6.9	2.7	800	90	8	55.7	101	<0.02	6.7	0.33	2	416	0.25	9.4	53.3	0.6	2.8	0.428	2.7
FRUSEB	Finniss River Upstream East Branch	3/01/2019			242.59	7.35		105		4		7.8	2.6	1800	140	4	108	49.8	<0.02	12.2	0.12	1.9	182	0.06	18.8	42.5	0.37	1.6	0.523	1.5
FRUSEB	Finniss River Upstream East Branch	5/02/2019			66.52	6.29		23		2.8		7.6	2.5	600	40	4	22	185	<0.02	2.7	0.13	1.2	308	0.18	3.7	4.31	0.47	0.9	0.332	1.2
FRUSEB	Finniss River Upstream East Branch	19/03/2019			183.17	6.71		74		2		7.8	3.2	500	100	3	75.5	24	<0.02	9	0.06	0.63	48	0.03	12.9	10.5	0.28	1.1	0.306	0.7
FRUSEB	Finniss River Upstream East Branch	8/04/2019			109.87	7.14		32		2		7.3	2.3	400	40	4	28.3	53.3	<0.02	3.3	0.1	1.12	160	0.09	4.9	8.99	0.38	0.8	0.297	4.1
FRUSEB	Finniss River Upstream East Branch	8/05/2019			118.71	7.5		53		4		7.8	3.4	1400	70	5	58.4	8.3	0.04	6.7	0.17	1.26	84	0.07	10.1	23.5	0.36	1.4	0.224	0.6
FRUSEB	Finniss River Upstream East Branch	23/07/2019			319.56	7.71		181		4			3.5	3700	190	2	182	35.1	<0.02	20	0.09	0.76	12	0.01	32.2	42.4	0.19	0.8	1.87	2.4
No. of samples			11.0	88.0	128.0	130.0	48.0	23.0	48.0	25.0	47.0	23.0	74.0	74.0	12.0	62.0	25.0	74.0	74.0	73.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0
Minimum			13.4	1.4	29.7	5.8	12.2	23.0	9.0	1.9	2.0	6.9	1.4	300.0	40.0	1.0	22.0	1.3	0.0	1.5	0.1	0.6	10.0	0.0	1.7	3.0	0.2	0.2	0.1	0.2
Maximum			272.0	126.0	1185.0	8.1	534.0	217.0	231.0	4.0	5.0	8.3	3.8	3700.0	280.0	18.0	230.0	683.0	0.0	25.8	0.6	33.9	466.0	0.4	44.3	119.0	0.8	2.8	4.5	10.5
Mean			139.0	16.4	280.5	7.3	138.6	138.5	135.6	3.2	3.4	7.9	3.0	1643.2	152.5	4.0	138.5	36.6	0.0	15.1	0.1	2.4	116.9	0.1	23.8	28.4	0.4	0.8	1.3	2.0
Standard Deviation			88.5	21.7	176.1	0.5	100.3	74.4	76.7	0.7	1.5	0.3	0.4	810.2	82.9	2.5	75.2	83.0	0.0	8.6	0.1	3.8	116.6	0.1	13.9	20.4	0.1	0.4	0.9	2.1
80th Percentile			214.0	20.3	425.3	7.7	205.6	208.0	209.6	3.9	4.3	8.2	3.3	2100.0	220.0	5.0	210.8	47.6	0.0	23.8	0.2	2.5	216.4	0.1	37.5	40.4	0.5	1.0	2.1	2.8
FRUSMB	Finniss River Upstream Mount Burton	27/03/2012			101	6.02	27.2		33.184		<5		2.6	500				15	<0.2	5	<0.1	0.5	180	<0.1	7.3	5.5	0.3	0.3	0.24	2
FRUSMB	Finniss River Upstream Mount Burton	24/04/2012			207.1	6.17	89		108.58		<5		3.1	1100				9.8	<0.02	10.5	0.02	0.28	60	<0.01	15.9	7.25	0.18	0.5	0.463	0.5
FRUSMB	Finniss River Upstream Mount Burton	23/05/2012			251.2	7.11	98		119.56		<5		3.3	1200				4.8	<0.02	14.7	0.08	0.29	70	0.02	21.3	8.33	0.61	0.5	0.738	4.8
FRUSMB	Finniss River Upstream Mount Burton	19/06/2012			300	7.12	156		190.32		<5			800					0.06	20.2	0.04	0.4	170	0.08	29.4	8.33	0.58		0.995	
FRUSMB	Finniss River Upstream Mount Burton	16/07/2012			367.6	7.16	170		207.4					600					<0.02	23	0.06	0.31	24	<0.01	32.3	13.1	0.5		1.32	1.6
FRUSMB	Finniss River Upstream Mount Burton	25/07/2012			327.3	7.39	164		200.08				3.5	800					<0.02		0.08	0.31		0.05	33.4		0.24	0.6	1.51	1.3
FRUSMB	Finniss River Upstream Mount Burton	14/08/2012			319.9	6.92	196		239.12		<5			600					<0.02	24.4	0.05	0.78	26	<0.01	34.1	9.79	0.18		1.56	0.6
FRUSMB	Finniss River Upstream Mount Burton	10/09/2012			383.6	7.53	200		244																					
FRUSMB	Finniss River Upstream Mount Burton	11/10/2012			443.4	7.63	206		251.32		<5			600					<0.02	26.5	0.06	1.08	34	0.02	36.1	18.1	0.24		1.52	0.5
FRUSMB	Finniss River Upstream Mount Burton	6/11/2012			424	7.55	198		241.56		<5		3.4	600				6.7	<0.02	27.2	0.07	0.33	34	0.03	36.7	16.9	0.15	1.1	1.39	1.2
FRUSMB	Finniss River Upstream Mount Burton	4/12/2012			80.7	6.65	28		34.16		<5			600				78.6	<0.02	3.1	0.07	0.91	202	0.22	4.8	8.44	0.39		0.32	1.1
FRUSMB	Finniss River Upstream Mount Burton	3/01/2013			201	7.39	86		104.92		<5		3.1	500				10.9	<0.02	10.5	0.07	0.71	152	0.09	14.1	7.4	0.34	1.2	0.35	0.7
FRUSMB	Finniss River Upstream Mount Burton	30/01/2013			149.6	7.72	61		74.42		<5		3.4	700		6		36.2	<0.02	7	0.07	0.88	248	0.12	9.9	6.73	0.36	1	0.595	0.6
FRUSMB	Finniss River Upstream Mount Burton	11/02/2013		20.3	140	7.53																								
FRUSMB	Finniss River Upstream Mount Burton	26/02/2013		17.4	86.9	6.21	38		46.36		<5		3	800		4		31.3	<0.02	4.2	0.1	0.67	256	0.09	6.1	8.69	0.54	0.6	0.387	0.4
FRUSMB	Finniss River Upstream Mount Burton	11/03/2013		49.33	56.2	6.9																								
FRUSMB	Finniss River Upstream Mount Burton	26/03/2013		54.5	44.3	6.24	16		15		<5		1.8	400		7		96.9	<0.02	1.7	0.08	0.56	230	0.13	2.4	4.67	0.55	0.6	0.2	0.5
FRUSMB	Finniss River Upstream Mount Burton	8/04/2013		9.65	99.9	6.94																								
FRUSMB	Finniss River Upstream Mount Burton	23/04/2013		5.32	139	7.45	70		85.4		<5		3.2	1300		3		4.6	<0.02	7.7	0.07	0.27	154	0.04	12	11	0.18	0.5	0.341	0.5
FRUSMB	Finniss River Upstream Mount Burton	7/05/2013		3.06	232.6	7.78																								
FRUSMB	Finniss River Upstream Mount Burton	22/05/2013		10.62	200	7.5	93		113.46		<5		3.8	1800		5		24.5	<0.02	10.3	0.09	0.46	176	0.05	16	15.4	0.3	1.2	0.645	1.2
FRUSMB	Finniss River Upstream Mount Burton	3/06/2013		6.8	226.3	7.86																								
FRUSMB	Finniss River Upstream Mount Burton	17/06/2013		3.37	259.8	7.7	177		139		<5		3.6	1700		3		9.5	<0.02	16.2	0.05	0.3	180	0.02	23.5	11.3	0.17	0.7	1.08	1
FRUSMB	Finniss River Upstream Mount Burton	1/07/2013		3.13	294	8.37																								
FRUSMB	Finniss River Upstream Mount Burton	15/07/2013		2.85	317.2	8.02	172		188		<5		3.2	1100		2		1.3	<0.02	20.8	0.06	0.28	38	<0.01	29.9	18	0.11	0.6	1.82	0.4
FRUSMB	Finniss River Upstream Mount Burton	29/07/2013		3.3	366	8.18																								
FRUSMB	Finniss River Upstream Mount Burton	19/08/2013		2.33	408.3	7.92	195		202		<5		3.1	600		3		7.9	<0.02	23.9	0.06	0.26	42	<0.01	34	22.1	0.12	0.6	1.85	0.3
FRUSMB	Finniss River Upstream Mount Burton	26/08/2013		1.79	399.4	7.8																								
FRUSMB	Finniss River Upstream Mount Burton	9/09/2013		2.21	440	7.89	232		212		<5		3.2	500		2		5.7	<0.02	25	0.07	0.67	34	<0.01	34.7	25.3	0.1	0.7	1.68	0.8
FRUSMB	Finniss River Upstream Mount Burton	23/09/2013		20.8	456.3	7.61																								
FRUSMB	Finniss River Upstream Mount Burton	7/10/2013		1.86	410	7.88	208		212		<5		3.4	500		3		12.7	<0.02	27.4	0.07	0.34	34	0.01	37.1	19.6	0.19	1	1.53	1
FRUSMB	Finniss River Upstream Mount Burton	21/10/2013		2.21	438.3	7.47																								
FRUSMB	Finniss River Upstream Mount Burton	5/11/2013		1.97	420.5	7.8	164		198		<5		3.5	500				8.3	<0.02	26.4	0.07	0.68	22	<0.01	35.1	17.8	0.16	1.2	1.49	0.5
FRUSMB	Finniss River Upstream Mount Burton	18/11/2013		26.57	84.4	7.15																								
FRUSMB	Finniss River Upstream Mount Burton	3/12/2013		18.7	169.8	7.31	75		81		<5		2.5	600		5		15	<0.02	9.3	0.07	1.03	284	0.08	13.1	15.1	0.29	1.6	0.353	1.7

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRUSMB	Finniss River Upstream Mount Burton	12/12/2013		18.77	116.3	7.6																								
FRUSMB	Finniss River Upstream Mount Burton	7/01/2014		12.33	130.7	7.57	58		57		<5		3.5	700		5		17.3	<0.02	6.3	0.08	0.34	280	0.07	8.7	11.6	0.24	0.8	0.302	<0.1
FRUSMB	Finniss River Upstream Mount Burton	20/01/2014		41.63	37.9	7.57																								
FRUSMB	Finniss River Upstream Mount Burton	4/02/2014		16.9	47.6	7.63	17		22		<5		1.7	400		6		46.8	<0.02	3.2	0.09	1.05	156	0.09	3	3.68	0.67	0.7	0.143	1.7
FRUSMB	Finniss River Upstream Mount Burton	14/02/2014		31.33	59.7	7.49																								
FRUSMB	Finniss River Upstream Mount Burton	4/03/2014		11.54	119.9	8.03	49.2		50		<5		2.8	500		3		41	<0.02	5.6	0.09	0.23	288	0.11	7.7	8.66	0.22	0.4	0.258	0.8
FRUSMB	Finniss River Upstream Mount Burton	18/03/2014		9.99	119.2	7.44																								
FRUSMB	Finniss River Upstream Mount Burton	1/04/2014		5.17	191.3	8.11	86		104.92		<5		2.9	1000		3		7.1	<0.02	9.5	0.07	1.72	110	0.02	14	11.9	0.19	0.4	0.447	0.2
FRUSMB	Finniss River Upstream Mount Burton	28/04/2014		4.88	220	7.68	101		106		<5		3.3	900				7.2	<0.02	12.2	0.09	0.41	164	0.02	18.1	15	0.16	0.7	0.672	0.4
FRUSMB	Finniss River Upstream Mount Burton	14/05/2014		4.72	227.7	7.82																								
FRUSMB	Finniss River Upstream Mount Burton	21/05/2014		3.32	282.7	6.85	120		137		<5		3.3	700		1		3.2	<0.02	16	0.08	0.5	70	0.3	24.3	16.6	0.26	0.6	1.09	2
FRUSMB	Finniss River Upstream Mount Burton	27/05/2014			280.9	7.25	136		165.92		<5		3.1	600				2.3	<0.02	15.7	0.07	0.29	62	0.02	23.1	14.3	0.18	0.6	1.06	1.1
FRUSMB	Finniss River Upstream Mount Burton	10/06/2014		9.19	300.2	7.96																								
FRUSMB	Finniss River Upstream Mount Burton	23/06/2014		2.39	311.3	8.24	180		184		<5		3	500		2		1.2	<0.02	21.3	0.06	0.29	42	<0.01	31	16	0.12	0.6	1.67	0.5
FRUSMB	Finniss River Upstream Mount Burton	7/07/2014		3.79	341.2	7.71																								
FRUSMB	Finniss River Upstream Mount Burton	22/07/2014		1.73	312.8	8.09	192		190		<5		3.1	700		2		0.9	<0.02	24.4	0.07	0.3	22	<0.01	34.2	13.9	0.11	0.6	1.75	0.2
FRUSMB	Finniss River Upstream Mount Burton	5/08/2014		2.89	393.9	7.76																								
FRUSMB	Finniss River Upstream Mount Burton	18/08/2014		1.97	368.7	7.26	194		199		<5		3.1	900		2		1.3	<0.02	25.1	0.07	0.24	30	0.01	34.4	13.4	0.13	0.7	1.8	0.3
FRUSMB	Finniss River Upstream Mount Burton	1/09/2014		4.69	428.6	7.69																								
FRUSMB	Finniss River Upstream Mount Burton	16/09/2014		4.67		8.06	216		208		<5		3.1	700		3		2.4	<0.02	25.1	0.1	0.34	38	0.03	35.6	30.2	0.18	0.8	1.69	0.4
FRUSMB	Finniss River Upstream Mount Burton	29/09/2014		5.26	448.9	7.95																								
FRUSMB	Finniss River Upstream Mount Burton	13/10/2014		8	458.9	8.02	140		198		<5		3.3	600		3		4.5	<0.02	26.6	0.12	0.49	30	0.04	37	29.4	0.3	0.9	1.93	0.6
FRUSMB	Finniss River Upstream Mount Burton	27/10/2014		3.85	452.9	8.14																								
FRUSMB	Finniss River Upstream Mount Burton	11/11/2014		3.29	497.4	8.61	292		220		<5		3.5	500		4		7	<0.02	26.9	0.09	0.42	32	0.04	37.4	37.7	0.37	1.1	1.73	1.7
FRUSMB	Finniss River Upstream Mount Burton	25/11/2014		3.15	424.9	7.23																								
FRUSMB	Finniss River Upstream Mount Burton	10/12/2014		2.18	448.3	8.01			219		<5		3.3	400		4		11.3	<0.02	25.7	0.08	0.21	44	0.06	35.1	31.2	0.25	1.1	1.54	0.5
FRUSMB	Finniss River Upstream Mount Burton	6/01/2015		48.4	43.8	6.27	15.2		14		<5		2.1	800				160	<0.02	2.8	0.17	1.86	230	0.13	2.6	8.82	1.17	1.4	0.403	2.5
FRUSMB	Finniss River Upstream Mount Burton	20/01/2015		47.4	74	6.67																								
FRUSMB	Finniss River Upstream Mount Burton	3/02/2015		15.84	70.2	7.82	13.2		37		<5		2.7	600		4		33.8	<0.02	4	0.1	0.41	216	0.07	5.7	11.3	0.31	0.7	0.272	1
FRUSMB	Finniss River Upstream Mount Burton	17/02/2015		35.43		7.93																								
FRUSMB	Finniss River Upstream Mount Burton	4/03/2015		25.5	83.7	7.54	34		34		<5		2.4	500		5		53.5	<0.02	3.8	0.08	0.47	166	0.06	5.2	8.17	0.31	0.5	0.248	1.5
FRUSMB	Finniss River Upstream Mount Burton	18/03/2015		13.37	161.9	7.58																								
FRUSMB	Finniss River Upstream Mount Burton	1/04/2015		16.8	133.8	6.56	56.6		60		<5		2.9	1100		5		66.2	<0.02	6.6	0.12	0.43	158	0.07	9.7	20.3	0.34	0.4	0.374	2.7
FRUSMB	Finniss River Upstream Mount Burton	16/04/2015		23.4	220.7	7.32																								
FRUSMB	Finniss River Upstream Mount Burton	29/04/2015		70.63	269.8	7.29	102		132		<5		3.4	1400		3		8	<0.02	14.6	0.11	0.4	136	0.04	22.4	22.3	0.04	0.5	1.08	0.9
FRUSMB	Finniss River Upstream Mount Burton	13/05/2015			329.4	7.97																								
FRUSMB	Finniss River Upstream Mount Burton	27/05/2015		4.79	364.3	7.97	116		166		<5		3.2	700		2		9.8	<0.02	20.6	0.08	0.27	14	<0.01	30.9	19.5	0.11	0.6	2.04	0.5
FRUSMB	Finniss River Upstream Mount Burton	10/06/2015		3.37	377.5	7.99																								
FRUSMB	Finniss River Upstream Mount Burton	25/06/2015		2.99	394.2	7.15	200		192		3		3	600		2		14.8	<0.02	22.6	0.07	0.26	26	<0.01	33.6	17.7	0.12	0.6	2.2	0.5
FRUSMB	Finniss River Upstream Mount Burton	9/07/2015		2.99	398.4	7.83																								
FRUSMB	Finniss River Upstream Mount Burton	22/07/2015		2.43	329.3	6.91	298		191		<5		3.1	700		2		22.7	<0.02	23.8	0.08	0.81	32	0.02	34.9	12.6	0.15	0.7	2.22	0.9
FRUSMB	Finniss River Upstream Mount Burton	5/08/2015		2.28	373.8	7.92																								
FRUSMB	Finniss River Upstream Mount Burton	18/08/2015		4.63	337.2	8.03	186		202		<5		3.4	600		2		1.2	<0.02	26.1	0.09	0.46	48	<0.01	37.8	16.7	0.11	0.8	2.28	0.3
FRUSMB	Finniss River Upstream Mount Burton	2/09/2015		1.92	441.4	7.87																								
FRUSMB	Finniss River Upstream Mount Burton	15/09/2015		1.55	457.9	7.65	196		218		<5		3.4	500		3		1.3	<0.02	25.4	0.11	0.34	54	0.01	35.8	48.9	0.17	0.9	2.06	0.4
FRUSMB	Finniss River Upstream Mount Burton	13/10/2015		5.27	466.3	7.75	216		228		<5		3.6	500		7		0.8	<0.02	27.1	0.11	0.18	38	<0.01	39.2	60.4	0.17	1.3	1.81	<0.1
FRUSMB	Finniss River Upstream Mount Burton	28/10/2015		4.91	388.6	7.45																								
FRUSMB	Finniss River Upstream Mount Burton	9/11/2015		1.96	451.2	8	226		197		<5							1.7	<0.02		0.12	0.84	56	0.04		46.1	0.22		2.02	0.6
FRUSMB	Finniss River Upstream Mount Burton	25/11/2015		3.61	431.7	7.92																								
FRUSMB	Finniss River Upstream Mount Burton	10/12/2015		6.62	449.2	8.05	210		182		<5		3.3	500		6		2.3	<0.02	24.3	0.09	0.44	14	0.01	34.1	18.2	0.19	1.5	2.08	0.4
FRUSMB	Finniss River Upstream Mount Burton	22/12/2015		22.43	367.6	7.91																								
FRUSMB	Finniss River Upstream Mount Burton	5/01/2016		25.6	84.5	7.46	31.2		31		<5		3.1	500		7		24.5	<0.02	3.5	0.14	0.88	428	0.09	5.8	12.3	0.47	1.1	0.358	1.1
FRUSMB	Finniss River Upstream Mount Burton	21/01/2016		31.23	76.3	7.57																								
FRUSMB	Finniss River Upstream Mount Burton	3/02/2016		18.4	63.5	7.22	40		27		2.1		2.5	600		5		31.1	<0.02	3.5	0.19	0.56	206	0.07	4.8	23.3	0.38	0.5	0.292	1.8
FRUSMB	Finniss River Upstream Mount Burton	17/02/2016		13.72	70.2	7.2																								
FRUSMB	Finniss River Upstream Mount Burton	1/03/2016		28.17	98	7.49	43.8		43		<5		2.4	500		4		15.9	<0.02	4.7	0.14	0.43	176	0.05	7.2	23.1	0.28	0.5	0.252	1.3
FRUSMB	Finniss River Upstream Mount Burton	17/03/2016		12.1	93.9	7.22																								
FRUSMB	Finniss River Upstream Mount Burton	29/03/2016		8.44	153.2	7.7	45.6		45		<5		3	600		4		11.6	<0.02	4.9	0.11	0.28	250	0.05	7.7	13.8	0.21	0.5	0.233	0.8
FRUSMB	Finniss River Upstream Mount Burton	12/04/2016		5.29	173.6	7.7																								
FRUSMB	Finniss River Upstream Mount Burton	26/04/2016		5.98	236	7.53	126		105		<5		3.4	1000		4		8.3	<0.02	12.4	0.1	0.45	178	0.03	18.7	20.5	0.19	0.6	0.78	0.5
FRUSMB	Finniss River Upstream Mount Burton	13/05/2016		33.03	112.3	6.89																								
FRUSMB	Finniss River Upstream Mount Burton	23/05/2016		7.3	202.1	6.99	56		101		<5		2.9	500		4		10.4	<0.02	12.2	0.09	0.97	98	0.03	18.2	19.9	0.22	1	0.703	0.6
FRUSMB	Finniss River Upstream Mount Burton	7/06/2016		5.33	304.8	7.41																								
FRUSMB	Finniss River Upstream Mount Burton	20/06/2016		10.08	341.9	7.74	156		165		<5		3.1	700		3		16.1	<0.02	19.8	0.1	0.41	48	0.02	29.2	21.2	0.18	0.7	1.94	2.9
FRUSMB	Finniss River Upstream Mount Burton	7/07/2016		5.64	373	7.51																								
FRUSMB	Finniss River Upstream Mount Burton	20/07/2016		2.89	419.4	7.22	196		181		<5		3.2	600		5		16	<0.02	22.8	0.07	0.24	38	0.02	33	14.7	0.15	0.7	2.58	1
FRUSMB	Finniss River Upstream Mount Burton	17/08/2016		3.22	416.7	7.94	160		207		<5		3.3	700		3		19.7	<0.02	24.1	0.12	1.54	30	0.06	35.1	18.4	0.33	0.8	2.68	2.8
FRUSMB	Finniss River Upstream Mount Burton	29/08/2016		3.03	404.3	7.29																								
FRUSMB	Finniss River Upstream Mount Burton	31/01/2017	18.8		34.8	6.99							1.3	200		5		93.1	<0.02	1.5	0.08	0.75	234	0.1	1.9	4.78	0.33	0.5	0.19	2.2
FRUSMB	Finniss River Upstream Mount Burton	27/02/2017		8.19	127.9	7.06				2.2	7.5		2.8	800			57.8	34.7	<0.02	6.8	0.1	0.3	184	0.05	9.9	11.2	0.24	0.5	0.314	2
FRUSMB	Finniss River Upstream Mount Burton	14/03/2017		11.01		7.2																								
FRUSMB	Finniss River Upstream Mount Burton	5/04/2017			99.5	7.12		45		2.1	7.6		2.8	500			40.4	37.6	<0.02	4.7 4.8	0.12	0.73	176	0.11	6.9 7	13.7	0.36	0.4	0.201	6.6
FRUSMB	Finniss River Upstream Mount Burton	11/04/2017			137	6.82																								
FRUSMB	Finniss River Upstream Mount Burton	27/04/2017	152		168.1	6.7		75		2.6	7.9		3.1	800			69.7	24.1	<0.02	8	0.15	0.33	172	0.04	12.1	25.1	0.23	0.5	0.349	2.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
FRUSMB	Finniss River Upstream Mount Burton	30/05/2017			295.99	7.07		139		2.9		7.9	3.3	500		2	135	7.4	<0.02	15.5	0.07	0.26	44	<0.01	23.5	19.8	0.15	0.6	0.968	0.7
FRUSMB	Finniss River Upstream Mount Burton	7/06/2017			373.59	6.66																								
FRUSMB	Finniss River Upstream Mount Burton	20/06/2017			388.41	7.87																								
FRUSMB	Finniss River Upstream Mount Burton	21/06/2017						176		3		8.2	3.2	600		1.7	174	7	<0.02	20.5	0.08	0.29	34	0.02	29.9	15.7	0.11	0.6	1.6	0.5
FRUSMB	Finniss River Upstream Mount Burton	21/06/2017						179		3.1		8.2	3.2	600		1.8	175	6	<0.02	20.5	0.08	0.27	30	0.03	30.1	15.7	0.1	0.7	1.63	0.8
FRUSMB	Finniss River Upstream Mount Burton	4/07/2017			393.4	7.27																								
FRUSMB	Finniss River Upstream Mount Burton	18/07/2017	134		251.9	6.09		197		2.9		8.2	3.1	500		2	196	5	<0.02	23.5	0.22	3.7	20	<0.01	33.3	22.4	0.22	0.8	1.72	0.5
FRUSMB	Finniss River Upstream Mount Burton	2/08/2017			392.9	7.15																								
FRUSMB	Finniss River Upstream Mount Burton	15/08/2017	152		423.84	7.69		211		3.1		8.1	3.1	500		2.1	204	10.7	<0.02	24.7	0.09	0.56	38	0.02	34.5	22.9	0.15	0.8	1.7	0.9
FRUSMB	Finniss River Upstream Mount Burton	28/08/2017			408.84	7.61																								
FRUSMB	Finniss River Upstream Mount Burton	12/09/2017	226		416.96	6.9		209		3.1		8.2	2.9	500		2.7	204	7.2	<0.02	24.5	0.09	0.33	40	0.03	34.7	32.3	0.18	0.8	1.94	0.7
FRUSMB	Finniss River Upstream Mount Burton	28/09/2017			406.63	6.95																								
FRUSMB	Finniss River Upstream Mount Burton	11/10/2017	138		439.84	7.93		202		3.1		8.5	3.2	500		3.1	216	28.7	<0.02	26.5	0.23	2.27	40	<0.01	36.4	42.3	0.3	0.9	1.81	3
FRUSMB	Finniss River Upstream Mount Burton	23/10/2017			434.4	7.86																								
FRUSMB	Finniss River Upstream Mount Burton	8/11/2017			413.92	7.84		188		3.3		8.3	3.1	600			194	15.2	<0.02	24.4	0.09	0.53	24	0.05	32.3	24.1	0.27	1.1	1.44	2.5
FRUSMB	Finniss River Upstream Mount Burton	23/11/2017			376.53	7.99																								
FRUSMB	Finniss River Upstream Mount Burton	6/12/2017	186		272.5	7.61		131		3.8		7.9	3	2500			126	17.1	<0.02	15.5	0.07	1.07	58	0.03	21.3	19.5	0.28	1.4	0.884	1.5
FRUSMB	Finniss River Upstream Mount Burton	21/12/2017			330.94	7.77																								
FRUSMB	Finniss River Upstream Mount Burton	4/01/2018	138		290.07	7.85		164		3.1		8.2	3.1	1100			153	30.7	<0.02	19.5	0.06	0.46	24	0.02	25.4	9.17	0.25	0.9	1.52	2.3
FRUSMB	Finniss River Upstream Mount Burton	18/01/2018	306		67.82	6.79																								
FRUSMB	Finniss River Upstream Mount Burton	15/02/2018			32.28	6.73																								
FRUSMB	Finniss River Upstream Mount Burton	1/03/2018	24.6		90.72	6.71		41		1.9		7.8	2.3	600			38.6	30.5	<0.02	4.9	0.1	0.47	160	0.07	6.4	7.58	0.31	0.5	0.309	1.8
FRUSMB	Finniss River Upstream Mount Burton	2/03/2018						41				7.8	2.3	600			38.5	30.2	<0.02	4.9	0.1	0.48	202	0.06	6.4	7.64	0.33	0.4	0.316	2.6
FRUSMB	Finniss River Upstream Mount Burton	15/03/2018			75.81	7.23																								
FRUSMB	Finniss River Upstream Mount Burton	11/04/2018			78.52	7.1																								
FRUSMB	Finniss River Upstream Mount Burton	27/04/2018	86		138.95	7.44		81		2.5		7.7	3	1500		2.7	78.9	47.5	<0.02	9.3	0.11	0.29	172	0.04	13.5	21.9	0.21	0.7	0.514	3.3
FRUSMB	Finniss River Upstream Mount Burton	17/07/2018			829	6.9				3.1			3	800	190	4.3	186	64.8	<0.02	22.2	0.1	0.28	16	0.02	31.7	17.5	0.16	0.7	1.81	2.1
FRUSMB	Finniss River Upstream Mount Burton	15/08/2018			360.55	7.43		201		2.9		8.2	3.1	600	200	6	200	41.9	<0.02	24.4	0.07	0.21	22	0.03	33.9	19.4	0.19	0.7	1.74	2.5
FRUSMB	Finniss River Upstream Mount Burton	11/09/2018			1119	6.98		207		3.2		8.2	3.1	500	240	3	208	14.8	<0.02	25.6	0.08	0.22	30	0.02	35	38	0.19	0.8	1.6	0.9
FRUSMB	Finniss River Upstream Mount Burton	17/10/2018			440.85	6.99		211		3.4		8.2	3.3	400	260	1	214	56.5	<0.02	26	0.15	0.67	92	0.12	36.1	51.2	0.48	1.1	1.47	28.2
FRUSMB	Finniss River Upstream Mount Burton	7/11/2018			334.98	7.86		213		4		8.2	3.3	400	220	8	213	81.5	<0.02	26.4	0.09	0.16	22	0.04	35.8	36.5	0.16	1.1	1.4	2.7
FRUSMB	Finniss River Upstream Mount Burton	3/12/2018			72.26	7.28		31		4		7.4	2.2	500	80	8	30.4	146	<0.02	3.6	0.12	1.2	360	0.2	5.2	28.9	0.4	2.3	0.38	2.5
FRUSMB	Finniss River Upstream Mount Burton	3/01/2019			332.75	7.68		157		4		8.1	3	400	180	3	159	48.8	<0.02	19.7	0.07	0.23	44	0.02	26.5	28.8	0.18	1.3	1.45	1.6
FRUSMB	Finniss River Upstream Mount Burton	5/02/2019			58.32	6.65		23		2.6		7.6	2.6	600	40	4	21.6	159	<0.02	2.7	0.09	0.83	304	0.16	3.6	3.73	0.46	1	0.331	1.6
FRUSMB	Finniss River Upstream Mount Burton	18/03/2019			193.18	6.89		69		2		7.7	3.2	200	90	4	70.4	24.9	<0.02	8.4	0.11	0.39	250	0.09	12	32.1	0.29	1.1	0.292	1.4
FRUSMB	Finniss River Upstream Mount Burton	8/04/2019			289.1	7.11		30		2		7.3	2.4	400	40	3	28.2	39.3	<0.02	3.2	0.09	0.58	152	0.07	4.9	7.82	0.3	0.8	0.291	0.9
FRUSMB	Finniss River Upstream Mount Burton	8/05/2019						55		4		7.8	3.2	800	80	5	55	11.7	<0.02	6.3	0.09	0.51	80	0.03	9.5	15.5	0.24	1.3	0.295	0.6
FRUSMB	Finniss River Upstream Mount Burton	13/05/2019						55		4		7.8	3.3	700	80	5	55.2	10.8	<0.02	6.3	0.09	0.51	88	0.03	9.5	15.1	0.23	1.3	0.295	0.5
FRUSMB	Finniss River Upstream Mount Burton	23/07/2019			326.8	8.27		190		4			3.4	500	190	2	185	38.3	<0.02	21.9	0.06	1.06	14	<0.01	31.6	20.5	0.14	0.9	2.11	2.4
No. of samples			11.0	90.0	140.0	143.0	59.0	27.0	60.0	28.0	57.0	27.0	83.0	88.0	13.0	65.0	29.0	84.0	89.0	87.0	89.0	89.0	88.0	89.0	88.0	88.0	89.0	83.0	89.0	88.0
Minimum			18.8	1.6	32.3	6.0	13.2	23.0	14.0	1.9	2.1	7.3	1.3	200.0	40.0	1.0	21.6	0.8	0.1	1.5	0.0	0.2	14.0	0.0	1.9	3.7	0.0	0.3	0.1	0.2
Maximum			306.0	70.6	1119.0	8.6	298.0	213.0	251.3	4.0	3.0	8.5	3.8	2500.0	260.0	8.0	216.0	160.0	0.1	27.4	0.2	3.7	428.0	0.3	39.2	60.4	1.2	2.3	2.7	28.2
Mean			141.9	12.1	278.8	7.4	129.2	130.4	139.3	3.1	2.6	7.9	3.0	697.7	145.4	3.7	128.5	26.6	0.1	15.6	0.1	0.6	111.2	0.1	22.1	18.7	0.3	0.8	1.1	1.6
Standard Deviation			82.6	13.8	163.1	0.5	75.4	72.1	73.8	0.7	0.6	0.3	0.4	347.1	78.5	1.7	72.3	32.9		8.9	0.0	0.5	95.0	0.1	12.5	11.1	0.2	0.3	0.7	3.1
80th Percentile			186.0	19.1	414.5	7.9	196.8	201.8	207.1	3.9	2.8	8.2	3.3	800.0	212.0	5.0	201.6	38.7	0.1	24.7	0.1	0.8	182.4	0.1	34.7	23.8	0.3	1.1	1.8	2.2
IOHSE2	Intermediate Over Heap Seep 2	28/03/2012			660	3.53																								
IOHSE2	Intermediate Over Heap Seep 2	17/02/2017								1.6		7.2	1.7	2150000			2290	151	6.2	301 302	2700	464	360	<0.1	371 373	930	2450	0.3	50.8	2910
IOHSE2	Intermediate Over Heap Seep 2	15/03/2017		16.36		3.66		<1		3.2		3.7	2.7	3860000				35800	41.8	273 275	18600	7770	131000	15.7	664 669	28700	15400	1.2	371	31400
IOHSE2	Intermediate Over Heap Seep 2	7/04/2017						2		1.1		5.2	3	2940000				4080	22.4	323 325	10400	3880	2420	0.5	531 535	9450	10300	<0.1	82.3	14800
IOHSE2	Intermediate Over Heap Seep 2	10/04/2017			5207.4	3.57																								
IOHSE2	Intermediate Over Heap Seep 2	11/04/2017			5295.3	3.23																								
IOHSE2	Intermediate Over Heap Seep 2	15/02/2018	47.6		4200.1	6.38		50		1.7		7	1.7	2490000			2650	92.4	6.32	369	2860	155	30	0.08	420	387	2600	0.3	47.6	2410
IOHSE2	Intermediate Over Heap Seep 2	28/02/2018			4765.6	4.43		<1		2.6		4.2	2.9	4940000				15900	31.2	407	17900	3690	71700	7.11	936	19000	13300	2	257	23900
IOHSE2	Intermediate Over Heap Seep 2	24/04/2018	0		6218	3.37		<1		4.9		3.3	2.8	5750000				67300	72	370	29100	18500	189000	19.1	1010	44700	24800	2	661	50400
No. of samples			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Minimum			0.0	16.4	660.0	3.2	0.0	2.0	0.0	1.1	0.0	3.3	1.7	2150000.0	0.0	0.0	2290.0	92.4	6.2	369.0	2700.0	155.0	30.0	0.1	420.0	387.0	2450.0	0.3	47.6	2410.0
Maximum			47.6	16.4	6218.0	6.4	0.0	50.0	0.0	4.9	0.0	7.2	3.0	5750000.0	0.0	0.0	2650.0	67300.0	72.0	407.0	29100.0	18500.0	189000.0	19.1	1010.0	44700.0	24800.0	2.0	661.0	50400.0
Mean			23.8	16.4	4391.1	4.0		26.0		2.5		5.1	2.5	3688333.3			2470.0	20553.9	30.0	382.0	13593.3	5743.2	65751.7	8.5	788.7	17194.5	11475.0	1.2	245.0	20970.0
Standard Deviation			33.7		1945.2	1.1		33.9		1.4		1.7	0.6	1428921.5			254.6	26629.5	24.9	21.7	10277.5	6835.6	80111.4	8.7	321.4	17315.8	8460.4	0.9	241.8	18396.7
80th Percentile			38.1	16.4	5295.3	4.3		40.4		3.2		7.0	2.9	4940000.0			2578.0	35800.0	41.8	392.2	18600.0	7770.0	131000.0	16.4	980.4	28700.0	15400.0	2.0	371.0	31400.0
IPI	Intermediate Pit Inlet	19/06/2012			181.5	6.34	9		10.98		<5			67400					0.06	7.4	38	69.2	32	0.22	13.4	270	53		2.41	21.7
IPI	Intermediate Pit Inlet	16/07/2012			252.6	6.06	11.6		14.152					96200					0.08	10.4	42.1	55.4	8	0.05	18.6	339	56.5		2.68	23.1
IPI	Intermediate Pit Inlet	14/08/2012			228.4	6.29	12.8		15.616		<5			97700					0.06	10.8	39	53.1	8	0.17	19.3	317	56.5		2.71	22.2
IPI	Intermediate Pit Inlet	10/09/2012			271.7	5.56	10.6		12.932																					
IPI	Intermediate Pit Inlet	10/09/2012			271.7	5.56	10.6		12.932		<5			102000					0.06	11.1	36.2	45.7	8	0.07	20	300	53.1		2.61	21.2
IPI	Intermediate Pit Inlet	11/10/2012			295.8	6.13	11.2		13.664		<5			108000					0.06	11.6	31.7	42.6	10	0.14	21	259	50.1		2.44	19.7
IPI	Intermediate Pit Inlet	6/11/2012			301.5	6.9	10.2		12.444		<5		4.2	113000				21	0.04	12	29	42.5	14	0.21	21.8	256	46.8	0.9	2.45	19.4
IPI	Intermediate Pit Inlet	4/12/2012			331.2	6.05	13		15.86		<5			108000				37.6	0.08	11.6	34.1	56.8	22	0.63	20.9	293	50.4		2.38	21.3
IPI	Intermediate Pit Inlet	3/01/2013			320	7.11	9		10.98		<5		3.9	110000				27	0.06	11.9	29.5	39.3	16	0.26	21.2	265	45.7	0.9	2.01	19.8
IPI	Intermediate Pit Inlet	29/01/2019			266.06	6.84		9		1.9		7.1	3.7	83000	140	1	93.2	44.1	0.08	10.5	35.6	48.3	20	0.12	16.2	212	36.1	1.2	2.43	16.5

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0			10.00	2000		10.00	500		20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
No. of samples			0.0	0.0	10.0	10.0	9.0	1.0	9.0	1.0	7.0	1.0	3.0	9.0	1.0	1.0	1.0	4.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.0	9.0	9.0
Minimum			0.0	0.0	181.5	5.6	9.0	9.0	11.0	1.9	0.0	7.1	3.7	67400.0	140.0	1.0	93.2	21.0	0.0	7.4	29.0	39.3	8.0	0.1	13.4	212.0	36.1	0.9	2.0	16.5
Maximum			0.0	0.0	331.2	7.1	13.0	9.0	15.9	1.9	0.0	7.1	4.2	113000.0	140.0	1.0	93.2	44.1	0.1	12.0	42.1	69.2	32.0	0.6	21.8	339.0	56.5	1.2	2.7	23.1
Mean					272.0	6.3	10.9	9.0	13.3	1.9		7.1	3.9	98366.7	140.0	1.0	93.2	32.4	0.1	10.8	35.0	50.3	15.3	0.2	19.2	279.0	49.8	1.0	2.5	20.5
Standard Deviation					44.4	0.5	1.4		1.8				0.3	14783.8				10.4	0.0	1.4	4.4	9.4	8.2	0.2	2.8	37.7	6.4	0.2	0.2	2.0
80th Percentile					305.2	6.9	12.1	9.0	14.7	1.9		7.1	4.1	108800.0	140.0	1.0	93.2	40.2	0.1	11.7	38.4	56.0	20.8	0.2	21.1	306.8	54.5	1.1	2.6	21.9
IPIC	Intermediate Pit inflow culvert	7/01/2015		10.98	223.1	5.75	6.3		2		<5		3.6	84000				55.5	0.16	9	92.8	92.1	48	0.34	14.5	929	79.3	1.1	2.61	39
IPIC	Intermediate Pit inflow culvert	4/02/2015		3.95	171.1	6.22	12.6		10		<5		4	45300				45	0.04	5.1	35.3	47.8	46	0.03	9	295	35.3	0.8	2.51	10
IPIC	Intermediate Pit inflow culvert	1/04/2015		2.71	170.7	7.14	14.4		11		<5		4	50900				94.3	0.04	6.5	30.5	66.1	46	0.08	10.5	271	37.5	0.6	2.82	14.7
IPIC	Intermediate Pit inflow culvert	4/02/2016		4.8	141.3	6.74	14.6		10		1.5		3.5	38500				48.6	0.04	4.9	38	67.4	72	0.07	8.3	281	39.4	0.8	2.94	10.9
IPIC	Intermediate Pit inflow culvert	3/03/2016		2.7	161.8	7.22	18		13		<5		3.7	43400				43.1	0.06	5.4	35.6	70.5	50	0.04	9.5	300	40.2	0.5	2.68	14.9
IPIC	Intermediate Pit inflow culvert	31/03/2016		2.79	194.1	7	18.4		16		<5		4.1	53700				29.3	0.06	6.4	34.9	58.5	52	0.03	12.3	299	43.3	0.6	2.82	15.1
IPIC	Intermediate Pit inflow culvert	1/02/2017	6.4		104.9	7.4				1.3		7.1	3.1	28200				89.8	0.04	3.8	27.7	86	98	0.12	6.2	168	30.2	0.7	2.75	9.7
IPIC	Intermediate Pit inflow culvert	27/02/2017			142.6	6.9				1.4		6.9	3.5	44600				61.9	0.04	4.9	36.9	41.9	20	0.02	9.4	272	38.4	0.5	2.94	11.7
IPIC	Intermediate Pit inflow culvert	7/04/2017			117.46	6.41		13		1.5		7.1	3.7	27800				82.3	0.04	3.6 3.7	20	41.3	102	0.25	6.7	125	27.5	0.5	2.79	23.2
IPIC	Intermediate Pit inflow culvert	24/04/2017	13		160.58	6.28		13		1.9		7.3	4	45000				51.5	0.06	5.4	29.5	55.7	24	0.05	9.3	260	37.3	0.6	3.1	15.5
IPIC	Intermediate Pit inflow culvert	1/03/2018	0		130.03	6.46		13		1.2		7.4	3	36300			44.2	50.4	0.04	4.2	34.8	33.2	38	0.04	8.2	229	34.6	0.5	3.3	11.2
No. of samples			3.0	6.0	11.0	11.0	6.0	3.0	6.0	5.0	6.0	5.0	11.0	11.0	0.0	0.0	1.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Minimum			0.0	2.7	104.9	5.8	6.3	13.0	2.0	1.2	1.5	6.9	3.0	27800.0	0.0	0.0	44.2	29.3	0.0	3.8	20.0	33.2	20.0	0.0	6.2	125.0	27.5	0.5	2.5	9.7
Maximum			13.0	11.0	223.1	7.4	18.4	13.0	16.0	1.9	1.5	7.4	4.1	84000.0	0.0	0.0	44.2	94.3	0.2	9.0	92.8	92.1	102.0	0.3	14.5	929.0	79.3	1.1	3.3	39.0
Mean			6.5	4.7	156.2	6.7	14.1	13.0	10.3	1.5	1.5	7.2	3.7	45245.5			44.2	59.2	0.1	5.6	37.8	60.0	54.2	0.1	9.4	311.7	40.3	0.7	2.8	16.0
Standard Deviation			6.5	3.2	34.1	0.5	4.4	0.0	4.7	0.3		0.2	0.4	15263.2				20.8	0.0	1.5	19.0	18.6	26.6	0.1	2.4	212.3	13.7	0.2	0.2	8.5
80th Percentile			10.4	4.8	171.1	7.1	18.0	13.0	13.0	1.6	1.5	7.3	4.0	50900.0			44.2	82.3	0.1	6.4	36.9	70.5	72.0	0.1	10.5	299.0	40.2	0.8	2.9	15.5
IPO	Intermediate Pit at Outflow	6/08/2010			182	8.5					<5	5.93	3.4	63000				21	<0.2	7.2	43.9	76.4	<200	0.3	13.1	318	57.3	0.8	2.16	
IPO	Intermediate Pit at Outflow	19/06/2012			190.8	6.3	8.7		10.614		<5			66500					0.06	7.3	37.7	67.5	26	0.2	13.2	261	52.4		2.36	21.6
IPO	Intermediate Pit at Outflow	16/07/2012			250.7	6.14	11.8		14.396					96200					0.06	10.4	40.8	47.7	8	0.05	18.6	336	55.3		2.68	20.7
IPO	Intermediate Pit at Outflow	14/08/2012			227.7	6.43	11.8		14.396		<5			97700					0.06	11	37.5	49	8	0.06	19.4	312	55.2		2.62	21.5
IPO	Intermediate Pit at Outflow	10/09/2012			263.2	5.57	10.4		12.688		<5			103000					0.06	11.1	35.8	43	10	0.1	20	299	52.1		2.62	21.7
IPO	Intermediate Pit at Outflow	11/10/2012			299.4	6.36	13		15.86		<5			108000					0.06	11.6	30.8	40.2	12	0.13	21	258	49.2		2.5	20
IPO	Intermediate Pit at Outflow	6/11/2012			305.8	7.5	12.2		14.884		<5		4.2	113000				19.9	0.06	12	29.1	36.5	14	0.16	21.7	266	46.3	0.8	2.44	19.1
IPO	Intermediate Pit at Outflow	4/12/2012			327.3	6.44	12		14.64		<5			108000				30.4	0.06	11.5	31.2	35.6	20	0.42	20.9	290	47.5		2.19	19.6
IPO	Intermediate Pit at Outflow	3/01/2013			326.8	7.21	9.6		11.712		<5		3.9	109000				25.5	0.06	11.9	28.1	32.2	16	0.15	21.2	270	44.9	0.9	1.69	18.6
IPO	Intermediate Pit at Outflow	31/01/2013			331.6	6.71	9		10.98		<5		3.8	107000				24.1	0.06	11.4	33.3	48	14	0.25	20.6	300	47.6	0.9	1.97	21
IPO	Intermediate Pit at Outflow	27/02/2013		1.57	269.1	6.13	8		9.76		<5		3.9	107000				24.5	0.12	11.4	37.5	57.4	20	0.79	20.3	353	48.8	0.8	1.69	22.1
IPO	Intermediate Pit at Outflow	27/03/2013		1.15	306.9	6.17	9.8		8		<5		3.8	109000				43.1	0.12	11.3	53.6	123	22	0.79	20.1	471	64.2	0.8	2.31	33.6
IPO	Intermediate Pit at Outflow	24/04/2013		1.59	322	7.07	8.3		10.126		<5		3.9	122000				37.4	0.16	13	76.7	194	8	0.54	22.4	669	89.9	0.9	3.47	48.8
IPO	Intermediate Pit at Outflow	23/05/2013		2.84	336.8	6.95	6		7.32		<5		4	118000				50.7	0.14	12.9	70.9	181	6	0.46	21.9	630	90.5	0.8	3.17	47.1
IPO	Intermediate Pit at Outflow	18/06/2013		1.17	318.6	6.68	7.8		6		<5		3.9	118000				38.4	0.14	13	63.5	170	6	0.5	22.1	561	86.6	0.8	2.89	44.6
IPO	Intermediate Pit at Outflow	16/07/2013		1.04	316.8	6.63	92		7		<5		3.8	118000				21.6	0.12	12.7	53.6	144	4	0.31	21.9	476	83.5	0.9	2.88	42.5
IPO	Intermediate Pit at Outflow	20/08/2013		0.55	337.6	6.43	10		7		<5		3.9	118000				30	0.1	12.9	46.9	125	6	0.24	22.5	401	78	0.8	2.44	39.9
IPO	Intermediate Pit at Outflow	10/09/2013		1.73	332.7	8.36	4.5		5.49		<5		4.1	124000				29.2	0.12	13.2	45.4	118	6	0.25	22.9	389	76	0.9	2.35	39.4
IPO	Intermediate Pit at Outflow	8/10/2013		0.7	318	6.91	17.2		20.984		<5		4.2	128000				35.9	0.1	13.6	45.9	103	4	0.17	23.7	364	79.6	0.9	2.22	39.3
IPO	Intermediate Pit at Outflow	7/11/2013		0.9	326.4	6.99	10.8		13.176		<5		4.2	125000				32.9	0.12	13.6	42.7	76.8	4	0.21	24	372	71.8	0.9	1.98	37.9
IPO	Intermediate Pit at Outflow	4/12/2013		1.53	367.9	6.74	8.9		10.858		<5		4.1	118000				31.8	0.12	12.8	43.6	76.4	6	10.1	22.6	364	73.7	0.9	1.99	39.3
IPO	Intermediate Pit at Outflow	8/01/2014		2.69	349.7	5.93	9.67		1		<5		4.1	142000				23.8	0.24	15.6	144	290	4	1.01	24.5	1460	134	1	7.81	66.7
IPO	Intermediate Pit at Outflow	5/02/2014		8.28	127.8	7.31	7.2		5		<5		2.6	44700				24	0.08	5.5	46.1	63.9	24	0.08	8.4	406	43.1	0.7	3.84	16.1
IPO	Intermediate Pit at Outflow	5/03/2014		3.86	186.2	8.24	11.6		9		<5		3.6	51000				48.4	0.06	5.9	51.2	71.1	10	0.08	10.2	316	50.2	0.4	3.52	14.2
IPO	Intermediate Pit at Outflow	2/04/2014		3.93	175.4	8.25	12.4		15.128		<5		3.7	53300				52.2	0.06	6.3	44.9	74.2	16	0.11	11	312	49.5	0.5	3.59	13.6
IPO	Intermediate Pit at Outflow	29/04/2014		6.71	199.5	8.14	14.8		12		<5		3.9	54200				46.7	0.06	6.3	46.1	85.7	10	0.13	10.9	315	51.3	0.5	3.24	15.9
IPO	Intermediate Pit at Outflow	28/05/2014		2.36	175	6.74					<5		3.5	49600				34.1	0.04	5.9	39.8	80.1	4	0.14	10	285	48.3	0.5	3.06	16.7
IPO	Intermediate Pit at Outflow	3/06/2014		2.55	164.8	7.44	11.4		9		1.5		3.4	51300		2		33.6	0.06	6	39.4	94.9	12	0.28	10.2	278	44.9	0.4	2.85	19.9
IPO	Intermediate Pit at Outflow	24/06/2014		2.13	141.6	7.15	10.2		8		<5		3.2	49500				13.4	0.04	5.8	33.5	64.9	4	0.07	9.9	249	43.6	0.5	2.53	15.5
IPO	Intermediate Pit at Outflow	23/07/2014		0.78	200.9	6.09	11.1		9		<5		3.4	65400				12.2	0.04	7.7	35.1	52.7	4	0.04	13.1	310	51.4	0.6	2.42	20
IPO	Intermediate Pit at Outflow	19/08/2014		0.78	216.9	6.44	20		9		<5		3.5	72900				8.7	0.06	8.8	31.9	42.7	12	0.04	14.4	286	47.3	0.7	2.12	18.8
IPO	Intermediate Pit at Outflow	17/09/2014		0.73	230.3	6.93	12.8		9		<5		3.5	78600				17.4	0.04	9.1	28.3	31.5	10	0.06	15.7	262	44.5	0.7	2.01	17.8
IPO	Intermediate Pit at Outflow	14/10/2014		1.84	233.8	7.45	10.8		9		<5		3.7	83200				16.3	0.04	9.7	24.9	27.5	12	0.05	16.6	243	42.6	0.7	1.92	16.9
IPO	Intermediate Pit at Outflow	12/11/2014		6.99	223.4	6.01	10		8		<5		3.8	84600				16.8	0.06	9.7	22.6	25.8	10	0.04	16.6	210	39.3	0.7	1.78	16.2
IPO	Intermediate Pit at Outflow	11/12/2014		2.03	235	6.96	11.6		11		<5		3.8	85100				30.2	0.04	9.9	25.8	24.9	14	0.12	16.5	228	39	0.8	1.59	16.3
IPO	Intermediate Pit at Outflow	7/01/2015		6.63	232.9	6.24	3.78		3		<5		3.6	88200				42.2	0.12	9.9	73.2	61	16	0.24	15.7	751	69.5	0.9	2.15	32.6
IPO	Intermediate Pit at Outflow	4/02/2015		4	173.2	6.35	9		8		<5		3.8	47100				39.8	0.06	5.2	44.4	58.5	26	0.05	9.2	354	43.6	0.9	2.5	13.3
IPO	Intermediate Pit at Outflow	5/03/2015		7.47	143.1	5.95	15		10		<5		3.5	35100				29	<0.02	4.4	<0.01	0.15	<2	0.01	7.6	0.06	0.04	0.7	0.002	1.8
IPO	Intermediate Pit at Outflow	1/04/2015		2.73	149	7.04	11.4		11		<5		3.7	42400				88.8	0.04	5.3	30.4	65.7	42	0.15	9	244	37.4	0.4	2.6	15.7
IPO	Intermediate Pit at Outflow	28/04/2015		2.29	166	6.76	13.6		13		<5		3.8	44600				28.3	0.06	5.4	30.4	80.7	30	0.17	9.3	249	37.2	0.6	2.41	12.8
IPO	Intermediate Pit at Outflow	26/05/2015		9.04	184	7.71	8.4		9		<5		3.7	52100				27.2	0.04	6.1	26.3	58.1	16	0.1	10.5	232	39.2	0.8	1.86	13.7
IPO	Intermediate Pit at Outflow	1/07/2015		1.95	203.7	7.29	11.4		9		1.8		3.7	59300				30.1	0.04	6.8	22.3	64.9	14	0.14	11.9	193	41.5	0.7	1.78	18
IPO	Intermediate Pit at Outflow	23/07/2015		7.18	251	6.98	12.6		10		<5		3.8	75100				27.5	0.04	8.9	22	50.6	16	0.13	15.1	218	40.9	0.7	1.58	20.1
IPO	Intermediate Pit at Outflow	19/08/2015		3.07	220.4	6.18	11.6		10		<5		4.1	81200				12.4	0.04	9.5	21.6	47.9	10	0.11	16.2	205	41.9	0.8	1.72	18.4
IPO	Intermediate Pit at Outflow	16/09/2015		2.05	249.3	6.61	12		10		<5		3.9	77600				13.2	0.06	9.1	19.9	38.6	6	0.08	15.3	202	40.6	0.8	1.53	17.9
IPO	Intermediate Pit at Outflow	13/10/2015		5.06	246	7.82	12		10		<5		4	81300				13	0.04	9.3	19.7	21.6	8	0.09	16.3	224	31.7	0.8	1.57	12.4

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																						1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500		20.00		17		
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600		17.00			31	
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500		13.00			15	
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900		11.00			8	
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000	
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000	
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
IPO	Intermediate Pit at Outflow	10/11/2015		1.39	245.2	6.15	12		10		<5		4.2	87400				17.4	0.04	10.1	17.9	33.3	6	0.06	17.2	180	35.9	0.9	1.59	16.3
IPO	Intermediate Pit at Outflow	11/12/2015		1.41	249.2	6.48	13.6		9		<5		3.9	83600				20	0.04	9.5	18.7	31.8	10	0.13	16.1	191	34.6	0.9	1.49	15.3
IPO	Intermediate Pit at Outflow	6/01/2016		6.08	127.5	6.96	8.8		7		<5		3.1	45100				29	0.08	5.1	51	63.9	24	0.04	8.8	374	42.8	1.4	2.35	16.6
IPO	Intermediate Pit at Outflow	4/02/2016		4.06	142	6.79	13.8		10		1.5		3.3	38600				42.3	0.06	4.8	37.4	66.9	54	0.09	8.2	283	38.5	0.9	2.45	13.1
IPO	Intermediate Pit at Outflow	3/03/2016		3.12	150.7	7.27	15.8		12		<5		3.5	40000				58.4	0.04	5	32.4	73.2	80	0.18	8.9	250	37.6	0.6	2.78	11
IPO	Intermediate Pit at Outflow	31/03/2016		2.63	186.9	7.21	18.6		13		<5		3.8	53500				48.4	0.06	6.4	34.3	76.3	82	0.22	11.7	294	42.9	0.6	2.97	13.5
IPO	Intermediate Pit at Outflow	28/04/2016		1.77	180.3	7.13	20.4		18		<5		3.8	58500				46.5	0.06	6.8	33.4	85	16	0.12	12.3	300	44.7	0.6	2.8	14.7
IPO	Intermediate Pit at Outflow	24/05/2016		1.35	178.7	7.44	8.4		12		<5		4	61900				45.8	0.06	7.2	31.1	89.7	14	0.19	12.8	324	44.4	0.7	2.77	16.1
IPO	Intermediate Pit at Outflow	21/06/2016		1.57	194.4	7.69	10		35		<5		3.7	62200				40.8	0.08	7.3	28.9	83	4	0.12	12.6	358	43.6	0.9	2.22	16.6
IPO	Intermediate Pit at Outflow	21/07/2016		4	229.8	5.47	13.6		10		<5		3.7	66700				25.4	0.06	7.8	28.4	67.2	4	0.13	13.2	419	45.9	0.9	1.76	19.9
IPO	Intermediate Pit at Outflow	18/08/2016		2.63	223.3	6.92	13		11		<5		3.8	72100				36.6	0.08	8.4	31.6	55.6	10	0.15	14.4	488	50.8	0.9	1.7	24.1
IPO	Intermediate Pit at Outflow	31/01/2017	11		130.2	7.03							3.2	32700				66.5	0.04	4.3	27	61	68	0.12	7	209	29	0.8	2.27	8.7
IPO	Intermediate Pit at Outflow	27/02/2017			140.8	6.94				1.4		7	3.4	44400				59.9	0.06	5	39	55.9	16	0.05	9.2	290	41.4	0.6	3.26	15
IPO	Intermediate Pit at Outflow	7/04/2017			121.97	6.4		12		<0.1		7.2	3.6	30,300				73.9	0.02	4 4.1	23.1	49.1	38	0.08	7	148	30.1	0.5	2.77	9.7
IPO	Intermediate Pit at Outflow	24/04/2017	20.8		142.4	6.57		12		1.7		7.4	3.6	38800				62.5	0.04	4.8	28.7	64.4	48	0.16	8.3	220	37.6	0.7	3.07	12.2
IPO	Intermediate Pit at Outflow	31/05/2017			128.02	6.92		12		1.5		7.1	3.6	39100				38.3	0.04	4.9	25.2	74	40	0.24	8.4	196	35.5	0.6	2.65	12.6
IPO	Intermediate Pit at Outflow	21/06/2017			182.04	6.65		12		1.8		7.1	3.7	57700				23.9	0.04	6.9	29.7	55.3	20	0.14	11.8	317	37.8	0.8	2.02	14.5
IPO	Intermediate Pit at Outflow	13/09/2017	150		200.04	5.58		14		1.9		7.2	3.5	60800				24	0.04	7.2	21.5	45.4	6	0.12	12.3	236	34.2	0.8	1.99	13.4
IPO	Intermediate Pit at Outflow	12/10/2017	94		202.15	6.19		11		1.9		7.3	3.8	66100			74.9	45.4	0.04	7.8	19	38.4	8	0.09	13.4	212	31.5	0.8	1.91	15.7
IPO	Intermediate Pit at Outflow	9/11/2017	16.4		205.23	6.04		2		1.8		7.7	3.8	64300				38.8	0.04	7.7	18.9	36.4	6	0.13	12.8	212	29.6	0.8	1.64	12.6
IPO	Intermediate Pit at Outflow	7/12/2017	19.8		196.86	5.49		11		1.9		7.3	3.8	66000			74.2	70.5	0.04	7.8	20	38	6	0.18	13.3	218	30.7	0.9	1.65	15.2
IPO	Intermediate Pit at Outflow	4/01/2018	138		185.77	6.78		12		2		7.3	3.9	66600			75	46.3	0.04	7.9	18.7	44.6	6	0.21	13.4	196	30.5	0.7	1.59	14.1
IPO	Intermediate Pit at Outflow	1/03/2018	13		125.19	6.58		11		1.1		7.3	2.9	36400			43.9	42.5	0.04	4.3	34.6	39.4	14	0.03	8	223	35.7	0.5	3.07	10.6
IPO	Intermediate Pit at Outflow	29/01/2019			255.25	6.8		11		1.8		7.3	3.6	76700	130	1	88.9	38.2	0.06	9.6	24.5	35.8	12	0.13	15.8	216	30.2	1	1.85	13.7
No. of samples			8.0	47.0	70.0	70.0	55.0	11.0	55.0	12.0	56.0	13.0	64.0	70.0	1.0	2.0	5.0	65.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	64.0	70.0	69.0
Minimum			11.0	0.6	122.0	5.5	3.8	2.0	1.0	1.1	1.5	5.9	2.6	30300.0	130.0	1.0	43.9	8.7	0.0	4.3	17.9	0.2	4.0	0.0	7.0	0.1	0.0	0.4	0.0	1.8
Maximum			150.0	9.0	367.9	8.5	92.0	14.0	35.0	2.0	1.8	7.7	4.2	142000.0	130.0	2.0	88.9	88.8	0.2	44.1	144.0	290.0	82.0	10.1	24.5	1460.0	134.0	1.4	7.8	66.7
Mean			57.9	3.0	223.7	6.8	12.8	10.9	10.7	1.7	1.6	7.2	3.7	75361.4	130.0	1.5	71.4	34.9	0.1	9.1	36.6	68.4	16.8	0.3	14.8	319.2	48.5	0.8	2.4	20.6
Standard Deviation			59.7	2.2	67.6	0.7	11.4	3.1	4.8	0.3	0.2	0.4	0.3	29014.0		0.7	16.5	16.3	0.0	5.1	18.5	44.7	16.9	1.2	5.1	182.7	19.2	0.2	0.9	11.3
80th Percentile			120.4	4.0	306.0	7.3	13.6	12.0	13.0	1.9	1.7	7.3	3.9	108000.0	130.0	1.8	77.8	46.3	0.1	11.5	45.1	81.2	21.2	0.2	20.7	365.6	55.2	0.9	2.9	21.9
MBDSPIT	Mt Burton downstream of Pit	28/02/2012			371.2	7.14	164		200.08		<5		2.5	7700				79	<0.2	17.8	14.7	294	320	1.3	32.2	53.9	15.1	0.1	2.15	4
MBDSPIT	Mt Burton downstream of Pit	27/03/2012			360	6.55					<5		2.5	7400				20	0.06	20.5	15.9	252	182	0.54	34.8	72.3	16.1	0.1	2.08	5.8
MBDSPIT	Mt Burton downstream of Pit	24/04/2012			454.3	6.51	196		239.12		<5		2.6	8900				17	0.02	22	9.46	160	60	0.19	42.4	57.8	9.94	0.2	2.04	5.8
MBDSPIT	Mt Burton downstream of Pit	23/05/2012			486	7.22	220		268.4		<5		2.6	9900				10.2	<0.02	22.1	5.56	107	6	0.04	44.5	45.1	7.44	0.2	1.42	2.1
MBDSPIT	Mt Burton downstream of Pit	19/06/2012			317	8.23	206		251.32		<5			10100					<0.02	22.7	2.65	61.6	44	0.06	46.5	34.2	4.26		0.968	1.9
MBDSPIT	Mt Burton downstream of Pit	16/07/2012			475.8	7.92	162		197.64					9700					<0.02	22.5	1.5	33.8	6	<0.01	45.5	29.3	3.16		0.84	2.3
MBDSPIT	Mt Burton downstream of Pit	14/08/2012			413.1	7.45	212		258.64		<5			9500					<0.02	22.1	1.26	28.7	10	0.01	44.6	25	2.23		0.873	1.1
MBDSPIT	Mt Burton downstream of Pit	10/09/2012			455.2	7.63	236		287.92		<5			9600					<0.02	22.1	0.87	23.9	54	0.05	45	26.9	1.55		0.841	2.7
MBDSPIT	Mt Burton downstream of Pit	11/10/2012			510	7.64	216		263.52		<5			9700					<0.02	22.5	1	15.5	10	0.01	45.7	37.2	1.44		0.903	0.9
MBDSPIT	Mt Burton downstream of Pit	6/11/2012			253.7	8.12	230		280.6		<5		2.7	10200				4.5	<0.02	23.1	0.62	16	46	0.06	47.3	26.7	1.06	<0.1	0.822	1.1
MBDSPIT	Mt Burton downstream of Pit	4/12/2012			532	7.28	210		256.2		<5			9900				14.3	<0.02	22.1	0.73	19.1	10	0.03	45.5	28.5	1.51		0.993	1.3
MBDSPIT	Mt Burton downstream of Pit	3/01/2013			546	7.5	82		100.04		<5		2.5	9400				7.4	<0.02	22.9	0.66	15.4	10	0.01	45.8	25.2	1.36	<0.1	0.833	0.7
MBDSPIT	Mt Burton downstream of Pit	30/01/2013			483	6.88	235		286.7		<5		2.6	9800				3	<0.02	22.6	1.71	30.2	20	0.01	46.1	41.2	2.64	0.1	1.03	1.3
MBDSPIT	Mt Burton downstream of Pit	26/02/2013			435	6.63	215		262.3		<5		2.7	10400				11.9	0.04	21.1	9.48	172	134	0.62	43.2	57.8	10.5	0.1	2.28	2.7
MBDSPIT	Mt Burton downstream of Pit	26/03/2013		2.68	474.8	7.18	158		218		<5		2.7	9300				12.1	0.04	20.5	8.58	138	146	0.35	43.9	60.8	9.1	0.1	2.57	3.1
MBDSPIT	Mt Burton downstream of Pit	23/04/2013		1.62	417.4	6.88	180		219.6		<5		2.6	9800				8.7	0.04	21.7	8.82	164	52	0.11	44.4	56.6	9.81	0.2	1.77	3.8
MBDSPIT	Mt Burton downstream of Pit	22/05/2013		1.88	495.4	7.38	225		274.5		<5		2.6	9000				21	<0.02	22	2.44	47.6	10	<0.01	44.5	37.5	3.58	<0.1	1.18	2
MBDSPIT	Mt Burton downstream of Pit	17/06/2013		1.22	453.1	7.64	204		230		<5		2.5	9600				8.1	<0.02	22.2	1.53	33.4	8	<0.01	45	20.8	2.5	<0.1	1.01	1
MBDSPIT	Mt Burton downstream of Pit	15/07/2013		1.41	427	7.78	246		247		<5		2.5	9500				1.9	<0.02	21.4	0.92	21.6	6	<0.01	43.3	18.4	1.79	0.1	1.03	1
MBDSPIT	Mt Burton downstream of Pit	19/08/2013		1.72	489.7	7.61	220		268.4		<5		2.5	9600				7.1	<0.02	21.9	0.45	14.4	8	0.02	44.6	13.2	1.02	<0.1	0.869	0.5
MBDSPIT	Mt Burton downstream of Pit	9/09/2013		0.67	496	7.32	258		314.76		<5		2.5	10000				6.1	<0.02	22.3	0.45	9.65	10	<0.01	44.9	18.4	0.89	<0.1	0.687	1.1
MBDSPIT	Mt Burton downstream of Pit	7/10/2013		1.87	441.7	7.18	280		341.6		<5		2.6	10100				11.9	<0.02	22.5	0.5	6.99	4	0.02	45.8	22.8	0.65	0.1	0.8	0.8
MBDSPIT	Mt Burton downstream of Pit	5/11/2013		6.92	448.7	6.67	280		341.6		5		2.8	14300				13.1	<0.02	20.9	1.68	48.1	76	0.12	43.9	36.9	3.41	0.5	2.36	1.3
MBDSPIT	Mt Burton downstream of Pit	3/12/2013		20.7	451.7	7.31	230		280.6		5		2.6	8900				5.1	<0.02	21.4	2.02	14.5	12	0.05	44.4	62.7	2.46	<0.1	5.88	2.8
MBDSPIT	Mt Burton downstream of Pit	7/01/2014		9.9	454.4	7.32	310		235		<5		2.6	9300				3.4	<0.02	21.8	2.75	52	16	0.08	45.3	39.1	3.93	<0.1	2.36	2.7
MBDSPIT	Mt Burton downstream of Pit	4/02/2014		16.3	188.1	7.57	130		91		<5		2.1	6100				22.4	0.04	10.1	17.1	254	134	1.48	17.6	45	17.6	0.3	2.15	5.5
MBDSPIT	Mt Burton downstream of Pit	4/03/2014		2.81	402.2	8.23	146		187		<5		2.6	7800				25.4	0.04	19.6	14.4	240	236	0.62	36.1	70.7	15	0.2	1.87	3.2
MBDSPIT	Mt Burton downstream of Pit	1/04/2014		1.84	172	7.9	204		248.88		<5		2.5	9000				9.3	0.04	22.1	9.99	152	52	0.1	43.7	66.9	10.6	0.2	1.54	2
MBDSPIT	Mt Burton downstream of Pit	28/04/2014		3.22	467	7.76	224		213		<5		2.6	8500				7.6	<0.02	21.2	4.86	79	24	0.04	43.8	54.7	5.63	0.2	1.28	1.4
MBDSPIT	Mt Burton downstream of Pit	27/05/2014		0.48	464.9	7.49	278		339.16		<5		2.5	8500				3	<0.02	21.1	2.54	36.9	8	0.02	43.3	44.3	3.24	0.1	1.11	0.9
MBDSPIT	Mt Burton downstream of Pit	23/06/2014		1.48	398.6	7.54	208		227		<5		2.5	9100				1.8	<0.02	21.3	1.43	24.1	4	<0.01	44.3	26.4	2.05	<0.1	0.925	0.7
MBDSPIT	Mt Burton downstream of Pit	22/07/2014		0.3	410.6	6.88	228		221		<5		2.6	10000				1.7	<0.02	22.6	1.02	18.3	4	<0.01	46.3	24.2	1.59	0.1	0.766	0.9
MBDSPIT	Mt Burton downstream of Pit	18/08/2014		0.74	452.4	7.41	224		226		<5		2.6	10200				2.2	<0.02	22.5	0.64	11	4	<0.01	45.5	20.3	1	0.1	0.83	0.9
MBDSPIT	Mt Burton downstream of Pit	16/09/2014		7.49		7.71	224		227		<5		2.5	10400				3.4	<0.02	21.7	0.57	5.91	8	0.05	45.6	25.6	0.78	0.1	1.03	0.7
MBDSPIT	Mt Burton downstream of Pit	13/10/2014		4.93	494.9	7.62	208		208		<5		2.6	10500				4.1	<0.02	22.1	0.4	4.56	8	0.02	46.2	20.8	0.71	<0.1	0.821	0.4
MBDSPIT	Mt Burton downstream of Pit	11/11/2014		1.7	526	8.08	416		231		<5		2.6	10300				5.6	<0.02	21.9	0.64	8.56	12	0.02	46.1	31	0.85	<0.1	0.967	0.6
MBDSPIT	Mt Burton downstream of Pit	10/12/2014		1.5	516	7.9	218		247		<5		2.6	10200				11.1	<0.02	22.3	0.61	8.54	8	0.01	46	27.6	1	<0.1	0.946	0.6
MBDSPIT	Mt Burton downstream of Pit	6/01/2015		9.02	339	4.29	19		169		5		2.9	11800				46.5	<0.02	17.3	7.02	152	160	0.86	36	53.2	7.9	0.3	2.71	2.8
MBDSPIT	Mt Burton downstream of Pit	3/02/2015		3.89	366.4	6.35	186		208		<5		2.7	10200				22.2	0.04	20.1	18.9	273	130	0.4	41	87	18.1	0.1	2.27	4
MBDSPIT	Mt Burton downstream of Pit	4/03/2015		1.91	385	7.61	166		169		<5		2.5	7800				41.6	0.04	17.2	16.5	237	246	0.77	33.4	77.5	16.4	0.1	1.94	4.2
MBDSPIT	Mt Burton downstream of Pit	1/04/2015		4.79	349	7.42	210		177		<5		2.4	7600				67.9	0.04	18.2	14.1	218	184	0.59	34.4	61.9	14.4	<0.1	1.93	5.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
MBDSPIT	Mt Burton downstream of Pit	29/04/2015		2.44	497.7	7.25	208		218		<5		2.6	8800				10.6	<0.02	20.8	7.04	112	46	0.08	43.9	72.3	7.08	<0.1	1.61	2
MBDSPIT	Mt Burton downstream of Pit	27/05/2015		2.24	471	7.51	194		205		<5		2.5	8600				14.9	<0.02	21.3	2.15	39.1	6	<0.01	44.1	34.7	3.05	0.1	1.04	1.3
MBDSPIT	Mt Burton downstream of Pit	25/06/2015		1.45	478.6	7.42	262		224		4.4		2.6	9600				1.5	<0.02	22.8	1.29	27.5	2	<0.01	46.9	25.8	2.23	0.1	1.03	1.5
MBDSPIT	Mt Burton downstream of Pit	22/07/2015		1.52	390.4	6.77	284		215		<5		2.6	9800				23.1	<0.02	21.9	0.83	19.3	8	0.02	45.1	18.6	1.59	0.1	0.895	1.4
MBDSPIT	Mt Burton downstream of Pit	18/08/2015		2.23	386.5	7.63	212		223		<5		2.8	10000				1.5	<0.02	23.2	0.58	14.9	12	0.01	48	15.5	1.09	<0.1	0.858	1.6
MBDSPIT	Mt Burton downstream of Pit	15/09/2015		1.66	484.4	7.64	264		234		<5		2.6	9200				1.3	<0.02	21.3	0.71	7.64	16	<0.01	43.8	26.3	0.82	<0.1	0.749	0.6
MBDSPIT	Mt Burton downstream of Pit	13/10/2015		2.08	499.8	7.7	300		234		<5		2.7	9600				1.6	<0.02	22.2	0.48	9.53	4	<0.01	47.7	19.9	0.7	0.1	0.714	0.4
MBDSPIT	Mt Burton downstream of Pit	9/11/2015		0.9	493.4	7.65	218		218		<5		2.8	10300				2.1	<0.02	23.3	0.66	16.4	6	<0.01	47.9	24.5	1.34	0.1	0.972	1.3
MBDSPIT	Mt Burton downstream of Pit	10/12/2015		4.52	514.4	7.69	234		205		<5		2.6	12000				2.9	<0.02	21.4	1.33	36.7	24	0.02	45	29.6	2.7	0.1	1.14	1
MBDSPIT	Mt Burton downstream of Pit	5/01/2016		1.11	402	7.59	152		173		<5		2.6	13800				10.9	0.04	18.8	15.4	242	198	0.64	38.3	90.7	16.5	0.3	2.18	3.7
MBDSPIT	Mt Burton downstream of Pit	3/02/2016		1.58	332.5	7.41	160		152		4		2.5	7600				16.2	0.02	16.9	14.7	242	204	0.68	33	58.2	15.5	0.2	1.65	3.5
MBDSPIT	Mt Burton downstream of Pit	1/03/2016		2.27	417.7	7.19	202		201		<5		2.3	8200				11.8	0.02	19.7	10.2	182	78	0.17	40.3	58	11.7	0.2	1.63	2.4
MBDSPIT	Mt Burton downstream of Pit	29/03/2016		1.37	470.1	5.63	224		207		<5		2.6	8800				7.3	<0.02	21.2	7.13	139	60	0.11	44	50.7	8.51	<0.1	1.44	2.3
MBDSPIT	Mt Burton downstream of Pit	26/04/2016		0.75	481.6	7			216		<5		2.5	8900				6.5	<0.02	21.5	1.85	40.7	12	<0.01	45.1	30.4	2.92	0.2	0.954	0.8
MBDSPIT	Mt Burton downstream of Pit	23/05/2016		0.93	435.1	6.27	198		219		<5		2.6	8700				11.4	<0.02	21.8	1.17	23.4	8	0.01	45.7	27.1	1.8	<0.1	0.808	1.3
MBDSPIT	Mt Burton downstream of Pit	20/06/2016		2.23	4.9	7.53	188		211		<5		2.5	9200				12.6	<0.02	21.8	0.64	13.5	4	<0.01	45.1	18.8	1.14	0.1	0.741	0.8
MBDSPIT	Mt Burton downstream of Pit	20/07/2016		1.25	524.9	6.53	212		217		<5		2.5	9500				12.6	<0.02	22.2	0.95	20	12	0.01	45.4	22.2	1.59	0.1	0.945	1
MBDSPIT	Mt Burton downstream of Pit	17/08/2016		8.19	483.5	7.48	180		232		<5		2.6	9600				20.5	<0.02	22.1	0.41	9.84	4	0.02	45.4	14.1	0.82	0.1	0.812	1.7
MBDSPIT	Mt Burton downstream of Pit	31/01/2017			409.9	6.53				4.1		8.1	2.6	8800				36.1	0.02	17.5	15.8	283	222	0.86	34.7	84.3	17.6	0.2	2.06	5.5
MBDSPIT	Mt Burton downstream of Pit	27/02/2017		2.55	399.2	5.8				4.4		7.8	2.7	7900				37.5	0.02	20.4	13	193	134	0.29	39.6	81.4	13.5	0.2	2.01	4.3
MBDSPIT	Mt Burton downstream of Pit	5/04/2017			436.72	6.84		205		4.4		8	2.5	8100				42.8	0.04	20.4	11.9	197	82	0.28	39	59.8	13.1	0.1	1.94	9
MBDSPIT	Mt Burton downstream of Pit	26/04/2017	204		453	6.71		218		4.5		8	2.4	8300				35.8	0.02	20	10.4	168	60	0.13	40.5	81.7	11.5	0.2	1.76	6.5
MBDSPIT	Mt Burton downstream of Pit	30/05/2017			492	6.21		231		4.5		7.9	2.6	8500				11.8	<0.02	21.6	3.12	44.3	16	0.01	45.1	61.7	3.61	0.2	1.1	1.7
MBDSPIT	Mt Burton downstream of Pit	20/06/2017			528.28	7.77		234		4.6		8	2.5	9200				6	<0.02	22	1.15	28.9	4	0.01	45.6	24.2	2.29	0.2	1.04	1.5
MBDSPIT	Mt Burton downstream of Pit	18/07/2017	198		361.77	7.3		231		4.4		7.9	2.5	8800				10.9	<0.02	21.9	1.15	18.4	18	<0.01	45.2	32.3	1.68	0.2	0.83	0.8
MBDSPIT	Mt Burton downstream of Pit	15/08/2017	214		474.59	7.42		241		4.4		7.9	2.6	9400			240	11.4	<0.02	22.1	0.99	12.9	8	0.01	45	20.8	1.54	0.1	0.71	2.1
MBDSPIT	Mt Burton downstream of Pit	12/09/2017	262		480.12	6.64		225		4.4		7.9	2.3	9700				26.8	<0.02	21.3	0.56	8.29	12	0.44	44.2	23.4	0.99	0.2	0.823	6.4
MBDSPIT	Mt Burton downstream of Pit	11/10/2017	148		446.48	7.03		222		4.2		8.3	2.5	10000			244	27.4	<0.02	22.3	0.54	9.03	8	<0.01	45.8	20.6	0.84	0.1	0.815	3.2
MBDSPIT	Mt Burton downstream of Pit	8/11/2017	202		496.2	7.31		218		4.5		8.1	2.6	11900			244	14.2	<0.02	22.2	1.34	19.2	8	0.03	45.3	29.4	1.8	0.2	1.17	1.9
MBDSPIT	Mt Burton downstream of Pit	6/12/2017	222		479.93	7.77		245		4.7		8	2.6	9800			243	15.1	<0.02	22.1	0.52	15.3	8	0.03	45.5	19.7	1.27	0.1	0.925	1.8
MBDSPIT	Mt Burton downstream of Pit	1/03/2018	180		388.18	7.22		176		2		8.4	2.5	6900			186	27.8	0.04	18.8	13.4	184	212	0.47	33.7	87.3	13.7	0.2	1.87	4.9
MBDSPIT	Mt Burton downstream of Pit	17/07/2018			1041	7.6				4.6			2.6	9300	220	3.8	232	91	<0.02	21	0.91	14.6	8	0.03	43.6	25.3	1.38	0.1	0.753	3.3
MBDSPIT	Mt Burton downstream of Pit	15/08/2018			442.77	6.57		224		4.3		7.9	2.6	9600	240	8	241	40.8	<0.02	22.1	0.52	9.08	8	0.03	45.1	19	0.93	0.1	0.694	2.6
MBDSPIT	Mt Burton downstream of Pit	11/09/2018			1312	6.58		229		4.5		8.1	2.6	9300	270	2	243	40.5	<0.02	22.1	0.4	4.71	10	0.03	45.5	20.7	0.64	0.1	0.683	2.4
MBDSPIT	Mt Burton downstream of Pit	17/10/2018			492.82	6.32		226		4.4		8.1	2.6	9700	300	<1	244	16.5	<0.02	22.2	0.53	4.66	10	0.03	45.8	29.9	0.77	0.1	0.743	1.4
MBDSPIT	Mt Burton downstream of Pit	7/11/2018			375.73	7.59		229		4		8	2.6	9800	240	7	247	62.9	<0.02	22.8	0.33	4.55	6	0.03	46.1	20.1	0.5	<0.1	0.669	2.8
MBDSPIT	Mt Burton downstream of Pit	3/12/2018			410.23	7.64		226		4		8.1	2.5	9200	230	1	239	76.8	<0.02	21.8	0.43	7.41	10	0.06	44.9	22.7	0.79	<0.1	0.732	3.4
MBDSPIT	Mt Burton downstream of Pit	3/01/2019			481.55	7.42		229		6		8	2.6	8900	250	<1	242	50.3	<0.02	22.3	0.9	10.8	8	0.02	45.3	39.5	1.3	0.1	0.854	1.8
MBDSPIT	Mt Burton downstream of Pit	5/02/2019			336.82	6.64		186		4.8		8.3	2.8	10700	270	3	210	57.8	<0.02	18.4	8.89	151	224	0.81	39.8	81	10	0.2	2.54	2.9
MBDSPIT	Mt Burton downstream of Pit	18/03/2019			468.7	6.73		237		4		8	2.6	9300	300	2	247	13	<0.02	22.1	1.06	23.4	6	0.01	46.7	20.7	2.08	0.2	0.731	1
MBDSPIT	Mt Burton downstream of Pit	8/04/2019			479.35	7.65		244		4		7.9	2.3	8900	250	<1	236	29.6	0.02	21.2	3.78	71.7	10	0.03	44.4	31.3	5.46	0.2	1.01	2.2
MBDSPIT	Mt Burton downstream of Pit	8/05/2019			479.61	7.61		228		4		8.2	2.7	9600	230	2	250	23.9	<0.02	22.7	1.17	25.8	8	0.01	46.9	21.5	2.31	0.1	0.904	1.8
MBDSPIT	Mt Burton downstream of Pit	23/07/2019			400.34	7.59		223		4			2.6	10700	230	<1	237	40.5	<0.02	21.7	0.39	5.15	8	0.01	44.3	14.4	0.63	0.2	0.659	2.6
No. of samples			8.0	46.0	83.0	84.0	57.0	22.0	58.0	25.0	58.0	23.0	78.0	84.0	12.0	12.0	16.0	79.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	78.0	84.0	84.0
Minimum			148.0	0.3	4.9	4.3	19.0	176.0	91.0	2.0	4.0	7.8	2.1	6100.0	220.0	1.0	186.0	1.3	0.0	10.1	0.3	4.6	2.0	0.0	17.6	13.2	0.5	0.1	0.7	0.4
Maximum			262.0	20.7	1312.0	8.2	416.0	245.0	341.6	6.0	5.0	8.4	2.9	14300.0	300.0	8.0	250.0	91.0	0.1	23.3	18.9	294.0	320.0	1.5	48.0	90.7	18.1	0.5	5.9	9.0
Mean			203.8	3.4	450.7	7.2	213.3	224.0	229.6	4.3	4.7	8.0	2.6	9453.6	252.5	3.6	236.3	19.7	0.0	21.2	4.4	74.0	51.1	0.2	43.2	39.2	5.1	0.2	1.3	2.3
Standard Deviation			32.8	4.0	143.7	0.6	56.0	16.6	48.0	0.6	0.5	0.1	0.1	1233.0	27.0	2.6	16.2	19.8	0.0	1.9	5.4	86.3	74.4	0.3	4.7	21.4	5.4	0.1	0.8	1.7
80th Percentile			218.8	4.5	493.2	7.6	235.8	233.4	263.0	4.5	5.0	8.1	2.6	10100.0	270.0	5.7	244.0	32.1	0.0	22.3	9.5	161.6	79.6	0.4	45.8	58.8	10.2	0.2	1.9	3.3
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	28/02/2012			197.2	6.84	188		229.36		<5		2.2	700				287	<0.2	13.8	0.5	1.7	360	1.3	12.1	53.3	0.6	0.1	0.34	2
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	27/03/2012			285.4	7.72	106		129.32		<5		2.3	800				11.9	<0.02	21.5	0.31	0.52	128	0.23	19.4	58.3	0.27	<0.1	0.537	2.5
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	24/04/2012			337.7	6.52	138		168.36		<5		2.4	3400				11.8	<0.02	24.3	0.47	1.56	170	0.3	23.4	98.3	0.41	0.2	0.698	1.2
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	4/02/2014		15.33	86.7	6.62	37.8		44		<5		1.8	600				47.8	<0.02	7.6	0.12	0.94	100	0.48	6	6.14	0.36	0.3	0.105	0.8
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	4/03/2014		6.35	214.8	7.64	74		90		<5		2.3	300				16	<0.02	14.6	0.25	0.31	132	0.25	12.7	34.9	0.29	0.2	0.339	0.6
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	1/04/2014		5.71	381.9	7.59	120		146.4		5		2.6	1800				7.7	<0.02	24.6	0.58	0.52	180	0.12	24.6	152	0.61	0.3	0.501	0.6
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	6/01/2015		9.57	132.1	6.58			62		5		3.9	3000				69.5	<0.02	11.2	0.18	4.17	86	0.75	10.4	5.75	1.06	0.6	0.271	0.9
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	3/02/2015		20.61	96.3	6.44	45		49		<5		2.3	300				54.4	<0.02	7.7	0.57	0.64	218	0.56	7.1	72.2	0.67	0.3	0.179	1.6
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	4/03/2015		5.42	138	7.34	59.4		58		<5		2.2	500				47.4	<0.02	9.5	0.32	0.51	158	0.23	8.8	35.7	0.38	0.2	0.169	1.5
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	1/04/2015		5.2	184.2	7.01	90		86		<5		2.2	600				66.8	<0.02	12.9	0.4	0.31	192	0.17	12.2	55.3	0.39	<0.1	0.234	2.5
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	5/01/2016		7.09	129.9	7.14	54		65.88		<5		2.7	2500				17.5	<0.02	9	0.38	1.5	102	0.26	8.5	46.7	0.69	0.5	0.263	0.9
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	3/02/2016		4.72	97.5	7.18	41.6		41		3.4		2.3	400				16.1	<0.02	6.8	0.29	0.45	142	0.21	6.9	32.4	0.39	0.1	0.128	1
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	1/03/2016		10.1	138.1	7.3	60		60		<5		2.1	200				9	<0.02	9	0.54	0.34	158	0.19	9	91.5	0.38	0.1	0.138	1
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	29/03/2016		16.61	210.2	7.57	84		88		<5		2.5	900				3.7	<0.02	14.2	0.56	0.47	146	0.11	14.1	94.5	0.47	0.2	0.232	0.8
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	31/01/2017	32.2		108.8	6.89							2.6	400				106	<0.02	6.3	0.58	1.26	198	0.66	6.1	132	0.7	0.4	0.206	3.3
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	1/03/2017		8.22	194.4	7.23				3.3		7.5	2.5	400				32.7	<0.02	13.8	0.5	0.31	160	0.17	13	76.3	0.41	0.1	0.42	1.6
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	5/04/2017			202.56	6.36		94		3.3		7.7	2.3	800				31.4	<0.02	14.3	0.41	0.53	196	0.25	13.9	71.3	0.39	0.1	0.31	4.9
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	26/04/2017	172		209.12	7.34		110		3.5		7.9	2.3	600				27.8	<0.02	16.1	0.79	0.33	140	0.12	15.5	171	0.42	0.2	0.368	1.9
MBusWR	Mt Burton Spring Creek upstream of Whites Rd	2/03/2018	92		241.14	7.23		101		2		8.2	2.3	700			101	26	<0.02	16.9	0.65	0.36	182	0.24	14.3	78.3	0.43	0.2	0.6	2.5
No. of samples			3.0	12.0	19.0	19.0	13.0	3.0	14.0	4.0	14.0	4.0	19.0	19.0	0.0	0.0	1.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Minimum			32.2	4.7	86.7	6.4	37.8	94.0	41.0	2.0	3.4	7.5	1.8	200.0	0.0	0.0	101.0	3.7	0.0	6.3	0.1	0.3	86.0	0.1	6.0	5.8	0.3	0.1	0.1	0.6
Maximum			172.0	20.6	381.9	7.7	188.0	110.0	229.4	3.5	5.0	8.2	3.9	3400.0	0.0	0.0	101.0	287.0	0.0	24.6	0.8	4.2	360.0	1.3	24.6	171.0	1.1	0.6	0.7	4.9

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
Mean			98.7	9.6	188.7	7.1	84.4	101.7	94.1	3.0	4.5	7.8	2.4	994.7			101.0	46.9		13.4	0.4	0.9	165.7	0.3	12.5	71.9	0.5	0.2	0.3	1.7
Standard Deviation			70.1	5.2	81.3	0.4	44.0	8.0	55.2	0.7	0.9	0.3	0.4	953.0				63.9		5.5	0.2	0.9	59.0	0.3	5.4	44.6	0.2	0.1	0.2	1.1
80th Percentile			140.0	14.3	225.3	7.4	114.4	106.4	136.2	3.4	5.0	8.0	2.5	1260.0			101.0	59.4		16.4	0.6	1.4	193.6	0.5	14.8	96.0	0.6	0.3	0.5	2.5
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	28/02/2012			141.9	4.8	120		146.4		<5		1.5	47100				731	1	1.8	417	11700	<20	36.3	5.5	256	364	0.6	38.4	100
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	27/03/2012			240.3	4.68																								
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	24/04/2012			213	5.43					<5		1.6	70900				906	1.66	2.6	658	17400	18	40.2	8.1	350	577	0.4	50	141
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	23/05/2012			172.9	4.9	1.2		1.464		<5		1.7	60000				709	1.22	2.3	495	14200	6	33.8	7.1	271	463	0.5	42.9	117
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	19/06/2012			149.2	5.15	2.8		3.416		<5			53000					0.96	2.4	432	10900	4	25.8	7.6	227	397		31	87.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	16/07/2012			140.7	5.37								48900					0.84	2.5	386	10600	34	22.2	7.4	203	349		25	79.2
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	14/08/2012			136.5	5.83	3.4		4.148		<5			46500					0.84	2.4	356	9170	8	21.5	7.6	193	325		24.9	75.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	10/09/2012			142.5	5.59	2.2		2.684																					
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	10/09/2012			142.5	5.59	2.2		2.684		<5			45000					0.78	2.3	303	8710	14	23.4	7.2	174	275		24.8	66.7
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	11/10/2012			144.5	5.01	4		4.88		<5			44900					0.68	2.3	270	8380	16	26	7.3	156	244		25.3	59.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	6/11/2012			187.1	5.82	6.2		7.564		<5		2.2	46100				22.5	0.64	2.6	238	7030	10	22.3	8	147	222	0.4	18.7	58.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	4/12/2012			172.7	5.89	3.6		4.392		<5			43500				32.8	0.64	2.5	253	6760	6	23.8	7.6	150	233		20.3	56
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	30/01/2013			162.5	6.54	2		2.44		<5		1.9	43900				33.2	0.76	2.5	299	7830	<20	23	7.9	172	277	0.4	23.1	64.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	26/02/2013			158.1	4.34	<1		1.22		<5		1.6	45900				561	0.86	2	361	10700	24	34.1	6.3	218	319	0.5	33.6	73.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	26/03/2013		0.78	181.9	4.73			<1		<5		1.8	53100				685	1.2	2.1	487	12800	30	36.3	6.6	272	436	0.5	37.6	96.9
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	23/04/2013		0.99	170.9	4.55					<5		1.8	120000				685	1.46	2.5	561	14400	10	37.5	7.5	310	501	0.6	41.8	127
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	22/05/2013		3.56	151.4	5.63																								
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	17/06/2013		2.54	137.2	5.7	28		3		<5		1.8	45000				117	0.96	2.5	374	9620	64	22.4	7.7	215	339	0.3	26.3	77.9
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	15/07/2013		0.18	147.9	4.24			<1		<5		1.9	48800				842	0.84	2.1	337	10600	<2	34.6	6	205	306	0.3	38.4	75.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	19/08/2013		5.55	146.1	5.2	5.7		3		<5		1.8	39000				124	0.66	2.3	254	7420	8	22.4	7	150	236	0.2	22.7	55.4
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	9/09/2013		0.15	180.7	4.38					<5		2.1	54900				762	0.66	2.8	241	8650	2	29.4	7.9	159	221	0.2	31.7	58.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	7/10/2013		0.5	165.4	4.25					<5		2.1	53600				658	0.62	2.7	244	8630	22	32.2	7.6	155	225	0.3	32.3	58.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	5/11/2013		0.78	196	4.66					<5		2.4	67200				556	0.66	4	242	7950	12	28.8	11.2	181	216	0.4	31.1	56.7
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	3/12/2013		0.41	175.6	4.78					<5		2.1	51800				509	0.62	3.1	238	7220	4	29.6	8.6	158	220	0.3	29.7	53
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	7/01/2014		0.69	159	5.27			2		<5		2	46800				190	0.88	3	312	8090	4	29.6	8.1	206	291	0.3	29.6	63.7
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	4/02/2014		53.93	32.2	4.55			<1		<5		0.8	7300				42	0.14	0.4	56.1	1620	4	10	0.8	31.1	53.8	0.3	4.77	22.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	4/03/2014		0.71	328.3	4.63			<1		<5		1.8	116000				1900	3.02	4.2	1330	28300	8	65.5	12	711	1120	1	84.7	252
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	1/04/2014		0.53	226.8	4.6					<5		1.7	65800				1040	1.56	2.6	620	15900	16	48.5	7.2	330	574	0.4	55.8	126
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	28/04/2014		0.53	172.5	4.75			<1		<5		1.9	51100				729	1.06	2.1	447	12400	10	41.3	6.1	235	410	0.4	44.1	94.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	27/05/2014			158	4.55					<5		1.8	48000				653	1.04	2.2	402	11300	4	36.1	6.3	221	373	0.3	39.5	85.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	23/06/2014		0	135.3	5.39			1		<5		1.9	50200				397	0.86	2.9	354	10100	<2	26.4	7.9	197	328	0.2	30.1	71.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	6/01/2015		4.88	105.8	4.22			1		<5		1.5	30600				300	0.52	1.7	203	6330	18	24.8	5.2	120	187	0.4	20.9	46.4
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	3/02/2015		0.2	181	4.7			<1		<5		1.9	72300				984	1.84	2.8	758	17100	10	44.9	8.5	417	665	0.7	51.7	140
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	4/03/2015		0.29	171.5	4.34			<1		<5		1.6	42100				628	0.9	1.8	400	10200	10	33	5.5	248	356	0.7	32	78.2
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	1/04/2015		0.41	111.4	4.63			<1		<5		1.5	35300				542	0.8	1.4	316	8500	10	29	4.6	184	289	0.4	27.5	74.9
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	29/04/2015		0.79	165.7	4.89			<1		<5		1.8	48100				550	1.1	2	445	11700	14	32	6.1	232	399	0.4	36	94.5
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	27/05/2015		11.29	131.8	5.61	5.33		1		<5		1.8	40700				201	0.88	2.1	351	9150	6	21.5	6.5	186	324	0.4	23.2	75.5
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	25/06/2015		13.96	132	6.21	3.4		4.148		3.1		1.8	41500				509	0.88	1.9	354	9390	4	24.1	6.2	188	325	0.3	26.8	77
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	22/07/2015		6.35	108.6	5.53	6.2		7.564		<5		1.9	42200				503	0.8	2	312	8710	6	20.9	6.4	166	288	0.3	23.8	69.9
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	18/08/2015		4.4	111.1	6.66	3.6		5		<5		2.1	39600				451	0.68	3.1	273	7920	6	21.4	9.3	144	256	0.2	24.4	58.5
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	15/09/2015		5.73	143.2	6.28	12.2		7		<5		2	40400				90.7	0.48	2.3	201	5750	8	19.1	6.9	114	187	0.2	18	44.2
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	10/12/2015		25.5	146.8	5.45	2.93		1		<5		2	41500				80.2	0.56	2.4	249	6540	32	24.6	7.2	143	227	0.4	21.9	54.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	5/01/2016		0.32	131.8	4.35					<5		1.6	42900				407	0.72	1.6	301	7340	8	28	5.2	204	275	0.7	23.1	72.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	3/02/2016		0.33	151.3	4.26			<1		2.8		1.6	47600				651	1.06	1.9	460	11100	10	35.4	5.8	274	406	0.7	34.2	85.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	1/03/2016		0.54	165.8	4.45			1		<5		1.6	50200				667	1.16	1.9	511	12100	16	35.6	6.1	270	451	0.5	36.9	101
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	29/03/2016		0.05	162.2	4.65			<1		<5		1.7	49700				628	0.98	1.7	436	12000	12	36.6	5.4	233	396	0.4	36.7	88.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	26/04/2016		5.69	119.9	5.23	4.4		4		<5		1.8	36100				170	0.72	1.8	292	7890	10	23.9	5.6	160	271	0.3	23.1	59.7
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	23/05/2016		0.02	128.6	6.85			<1		<5		1.9	41600				517	0.72	1.7	316	9280	4	32.8	5.2	172	281	0.3	31.9	68.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	20/06/2016		1.47	125.8	5.54			<1		<5		1.9	41300				516	0.74	1.7	289	7980	4	26.8	5.4	163	266	0.3	26.4	64.7
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	20/07/2016		6.17	134.2	5.95	2.67		1		<5		1.9	38600				371	0.62	2	251	6810	2	22.1	6.3	143	233	0.3	22	55.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	17/08/2016		6.67	134.2	5.47			<1		<5		2	40400				506	0.68	2.1	250	6540	4	24.1	6.2	147	241	0.2	25.2	54.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	31/01/2017			157.9	4.45				2.9		4.8	1.6	39800				530	0.88	1.6	394	9160	10	32.1	5.1	244	351	0.6	30.6	85.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	2/03/2017		0.85	209.7	4.84				3		4.2	1.8	72300				734	1.74	2.8	780	15800	2	35	9	459	699	0.9	36.8	152
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	5/04/2017			80.24	6		1		2.7		5.3	1.5	17700				93.8	0.36	0.8 0.9	137	2770	12	9.36	3.7	85.3	137	0.5	6.45	50.4
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	26/04/2017	8.4		113.89	5.89		<1		2.6		5.1	1.5	34800				214	0.88	1.4	370	7730	2	15.7	5.2	213	342	0.6	15.8	77.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	30/05/2017			139.15	6.11		1		2.8		5.2	1.8	42200				423	0.82	1.9	340	9610	4	26	5.9	189	310	0.3	28.6	72.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	20/06/2017			177.1	5.01		<1		<0.1		4.7	1.8	52000				415	1.28	2	532	12500	4	26.3	6.5	293	484	0.5	30.3	109
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	18/07/2017	2.4		91.84	5.95		2		3		5.4	1.8	38100				303	0.72	1.9	302	8080	4	20.7	6	162	293	0.4	23.1	61.6
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	15/08/2017	9.4		124.71	7.01		11		3.2		5.8	1.9	35700			34.2	97.1	0.6	2.3	254	6850	6	19.6	6.9	141	248	0.3	18.6	54.3
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	12/09/2017			119.19	5.76		1		3.2		5.5	1.8	36200				187	0.58	1.9	228	6740	4	22.7	5.9	138	224	0.3	22.9	51.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	11/10/2017			131.74	4.92		<1		3.3		5	2	40200			29.7	363	0.62	2	236	7440	52	28.4	6	143	229	0.3	26.9	59.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	9/11/2017	4.2		133.2	5.05		<1		0.2		5.1	1.9	39200				277	0.64	2	244	7060	20	25.9	6.1	144	227	0.3	23.1	53.8
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	6/12/2017			142.7	4.42		<1		3.3		4.4	1.9	40700			28.4	402	0.66	1.9	271	7650	4	28	5.7	158	257	0.4	25.5	65.1
MBWRDSEEP	Mt Burton Waste Rock Dump Seep	1/03/2018	3.6		56.5	4.92		<1		2.3		5.6	1.3	8600			10.4	43.7	0.1	0.4	36.4	1120	<2	11.1	2.3	19.5	42.1	0.4	3.39	21.3
No. of samples			5.0	37.0	64.0	64.0	21.0	11.0	39.0	13.0	47.0	13.0	55.0	61.0	0.0	0.0	4.0	56.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	55.0	61.0	61.0
Minimum			2.4	0.0	32.2	4.2	1.2	1.0	1.0	0.2	2.8	4.2	0.8	7300.0	0.0	0.0	10.4	22.5	0.1	0.4	36.4	1120.0	2.0	9.4	0.8	19.5	42.1	0.2	3.4	21.3
Maximum			9.4	53.9	328.3	7.0	120.0	11.0	146.4	3.3	3.1	5.8	2.4	120000.0	0.0	0.0	34.2	1900.0	3.0	4.2	1330.0	28300.0	64.0	65.5	12.0	711.0	1120.0	1.0	84.7	252.0
Mean			5.6	4.5	150.2	5.2	11.1	3.2	8.9	2.7	3.0	5.1	1.8	47123.0			25.7	468.6	0.9	2.2	361.6	9561.0	11.7	28.3	6.6	205.7	328.9	0.4	29.4	77.6
Standard Deviation			3.1	9.7	41.9	0.7	26.3	4.4	28.7	0.8	0.2	0.5	0.2	17710.0			10.5	328.1	0.4	0.6	189.1	4023.4	11.7	9.1	1.7	100.6	160.5	0.2	12.2	34.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
80th Percentile			8.6	5.7	172.8	5.8	6.2	3.8	4.9	3.2	3.0	5.5	1.9	52000.0			31.5	685.0	1.1	2.6	445.0	11700.0	16.0	35.0	7.7	248.0	399.0	0.5	36.8	94.5
MFds	Mt Fitch downstream	9/01/2014		2.01	75.4	6.39	27.8		32		<5		1.7	200				7.3	<0.02	1.4	0.57	17.4	66	0.14	5.8	14.4	1.85	<0.1	0.647	2.6
MFds	Mt Fitch downstream	6/02/2014		3.69	61	7.77	29		31		<5		1.3	200				12.3	<0.02	1.1	0.29	3.14	86	0.11	6.2	14.8	1.17	0.6	0.476	4.5
MFds	Mt Fitch downstream	6/03/2014		2.43	135.2	7.82	54.6		56		<5		1.6	<100				13.7	<0.02	1.5	0.42	1.7	64	0.07	11.9	30.6	0.82	0.1	0.446	0.7
MFds	Mt Fitch downstream	3/04/2014		3.43	59.1	7.78	32.4		39.528		<5		1.4	<100				12.1	<0.02	0.8	0.3	2.71	38	0.04	6.1	25.7	0.81	0.2	0.224	1.1
MFds	Mt Fitch downstream	6/03/2015		1.93	88.4	7.06	42.2		40		<5		1.7	200				35.8	<0.02	1.1	0.46	1.85	66	0.03	8.4	58.9	1.46	0.2	0.268	1.7
MFds	Mt Fitch downstream	2/04/2015		2.22	115.7	7.24	60		52		<5		1.6	300				52.4	<0.02	1.4	0.56	1.74	72	0.04	11.4	74.8	1.43	0.2	0.517	2.2
MFds	Mt Fitch downstream	3/03/2016		5.39	100.4	7.49	31.8		42		<5		1.5	<100				8.7	<0.02	1.1	3.17	6.78	128	0.09	9.3	168	2.11	<0.1	0.493	1
MFds	Mt Fitch downstream	1/03/2017		4.54	158.4	7.54				1.4		7.8	1.7	100				34.3	<0.02	2.1	1.3	5.5	70	0.04	16.2	119	1.75	<0.1	1.43	1.8
MFds	Mt Fitch downstream	4/04/2017						199		1.4		8.3	2.3	500				47.1	<0.02	3.8	0.92	3.51	22	0.05	44.3	71	1.79	<0.1	6.72	6.4
MFds	Mt Fitch downstream	7/04/2017			358.98	7.8																								
MFds	Mt Fitch downstream	27/04/2018	29.8		52.61	7.19																								
MFds	Mt Fitch downstream	27/04/2018						32		1.3		7.1	1.4	200			28.1	51.1	<0.02	0.9	1.17	2.93	148	0.03	6.3	156	2.18	0.3	0.228	3.3
No. of samples			110.0	123.0	149.0	149.0	120.0	125.0	121.0	129.0	121.0	127.0	149.0	149.0	109.0	109.0	117.0	149.0	147.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0	149.0
Minimum			2.4	0.0	4.9	0.4	1.2	1.0	1.0	0.2	0.2	0.1	0.1	19.0	0.0	0.0	1.0	1.3	0.0	0.4	0.1	0.3	2.0	0.0	0.8	5.8	0.2	0.1	0.1	0.4
Maximum			262.0	53.9	1312.0	84.0	416.0	245.0	341.6	25.0	58.0	23.0	78.0	120000.0	300.0	12.0	250.0	1900.0	84.0	84.0	1330.0	28300.0	360.0	84.0	84.0	711.0	1120.0	78.0	84.7	252.0
Mean			97.4	6.7	246.8	7.1	82.8	137.1	82.9	3.9	8.0	7.1	3.1	24790.8	171.3	3.1	140.6	230.9	2.6	10.5	169.8	4392.3	56.5	14.8	19.4	124.3	154.2	1.5	15.1	38.1
Standard Deviation			93.0	10.5	202.8	8.1	91.1	99.1	89.3	3.3	14.0	3.0	7.9	25173.9	122.4	3.4	102.3	331.5	11.2	11.6	235.8	5740.3	76.7	17.3	17.7	114.9	207.3	8.5	18.5	46.9
80th Percentile			202.4	8.8	413.2	7.5	181.6	229.0	195.4	4.5	5.0	8.1	2.6	46340.0	270.0	6.0	243.0	509.0	1.1	21.5	351.0	9170.0	102.0	29.2	44.3	197.0	319.0	0.4	30.1	75.3
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	9/01/2014		4.01	64.1	7.75	21.6		27		<5		1.6	100				10	<0.02	1	0.21	5.36	202	0.04	5.1	15.9	1.43	<0.1	0.21	<0.1
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	6/02/2014		5.41	63.4	7.28	30.8		32		<5		1.3	200				15.4	<0.02	1.1	0.5	3.08	78	0.13	6.5	32.9	1.25	0.6	0.661	3.2
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	6/03/2014		2.58	140.2	7.82	52		57		<5		1.6	200				12.2	<0.02	1.5	0.82	1.72	76	0.05	12.1	112	1.33	0.2	0.686	0.6
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	3/04/2014		5.36	53.5	8.09	23		28.06		<5		1.3	<100				13.6	<0.02	0.7	0.12	2.11	78	0.03	5	12.5	0.8	0.2	0.162	0.5
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	6/03/2015		1.74	88.4	6.58	38.6		39		<5		1.7	200				40	<0.02	1.1	0.62	2.03	78	0.05	8.4	67.4	1.7	0.2	0.272	5.5
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	2/04/2015		2.78	113.9	7.07	52.2		53		<5		1.6	200				49.3	<0.02	1.4	0.76	2.61	66	0.04	11.4	84.8	1.48	<0.1	0.522	2.1
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	3/03/2016		4.62	87	7.5	39.4		36		<5		1.4	100				7.9	<0.02	0.9	0.4	2.51	82	0.02	8	68.5	1.47	0.1	0.221	0.7
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	2/02/2017	43.8		95.3	6.88				1.5		7.8	1.6	200				37	<0.02	1.4	0.71	2.97	80	0.08	9.5	62.4	1.33	0.2	0.512	3.2
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	1/03/2017		2.06	145.3	7.55				1.6		7.8	1.6	<100				30.5	<0.02	1.9	0.71	1.85	6	0.02	15	110	1.56	<0.1	0.748	2.3
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	4/04/2017						55		2		7.9	1.6	200				29.2	<0.02	1.5 2.1	0.52	2.51	22	0.12	11.8 11.9	75.6	1.42	0.1	0.471	8.6
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	7/04/2017			105.47	7.72																								
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	27/04/2018						33		1.3		7.1	1.4	200			29.4	56.3	<0.02	0.9	2.76	5.41	220	0.11	6.6	140	1.43	0.2	0.548	4
MFdsWRD	Mt Fitch downstream of Waste Rock Dump	27/04/2018	34.6		53.46	7.18																								
No. of samples			2.0	8.0	10.0	11.0	7.0	2.0	7.0	4.0	7.0	4.0	11.0	11.0	0.0	0.0	1.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Minimum			34.6	1.7	53.5	6.6	21.6	33.0	27.0	1.3	0.0	7.1	1.3	100.0	0.0	0.0	29.4	7.9	0.0	0.7	0.1	1.7	6.0	0.0	5.0	12.5	0.8	0.1	0.2	0.5
Maximum			43.8	5.4	140.2	8.1	52.2	55.0	57.0	2.0	0.0	7.9	1.7	200.0	0.0	0.0	29.4	56.3	0.0	1.9	2.8	5.4	220.0	0.1	15.0	140.0	1.7	0.6	0.7	8.6
Mean			39.2	3.6	86.5	7.4	36.8	44.0	38.9	1.6		7.7	1.5	177.8			29.4	27.4		1.2	0.7	2.9	89.8	0.1	8.8	71.1	1.4	0.2	0.5	3.1
Standard Deviation			6.5	1.5	28.5	0.4	12.5	15.6	11.8	0.3		0.4	0.1	44.1				16.8		0.4	0.7	1.3	65.2	0.0	3.3	40.2	0.2	0.2	0.2	2.5
80th Percentile			42.0	5.1	107.2	7.8	49.5	50.6	50.2	1.8		7.8	1.6	200.0			29.4	40.0		1.4	0.8	3.1	82.0	0.1	11.5	110.0	1.5	0.2	0.7	4.3
MFPIT	Mount Fitch Pit	25/07/2012			181.2	8.16	82		100.04				1.9	100				1.5	<0.02		0.07	1.34	8	0.01	21.4	6.28	0.63	0.2	5.87	1.1
MFPIT	Mount Fitch Pit	9/01/2014		2.54	191.1	8.3	6.4		101		<5		1.7	400				3.2	<0.02	2.4	0.14	1.98	10	<0.01	19	3.12	0.93	0.4	13.9	0.5
MFPIT	Mount Fitch Pit	6/02/2014		3.08	161.8	6.61	70		85.4		<5		1.6	200				2.2	<0.02	2.3	0.18	1.4	28	0.09	18.7	33.9	1.18	0.2	3.79	3.2
MFPIT	Mount Fitch Pit	6/03/2014		2.09	203.7	7.55	64		88		<5		1.6	100				11.5	<0.02	2.3	0.06	0.51	90	0.06	19.3	9.39	0.52	0.1	2.14	2.3
MFPIT	Mount Fitch Pit	3/04/2014		2.22	186.5	8.16	92		112.24		<5		1.5	<100				8.5	<0.02	2.5	0.12	2.34	30	0.02	20.9	7.57	0.53	0.1	3.1	0.3
MFPIT	Mount Fitch Pit	6/03/2015		1.51	200.6	6.63	98		93		<5		1.7	200				34.6	<0.02	2.7	0.32	6.05	26	0.05	21.1	3.48	1.22	0.3	4.59	4.9
MFPIT	Mount Fitch Pit	2/04/2015		2.72	207.1	6.43	84		97		<5		1.6	300				49.1	<0.02	2.7	0.04	0.65	38	0.03	21	4.72	0.74	0.2	2.76	1.9
MFPIT	Mount Fitch Pit	3/03/2016		1.39	219.8	7.71	100		93		<5		1.6	<100				6.9	<0.02	2.7	0.06	1.54	56	0.02	22.2	1.14	0.71	0.2	3.63	1
MFPIT	Mount Fitch Pit	31/03/2016		3.32	231.9	8.1	92		93		<5		1.6	600				3.3	<0.02	2.7	0.06	0.98	32	<0.01	22.3	2.29	0.54	0.2	4.26	0.6
MFPIT	Mount Fitch Pit	2/02/2017	66		194.2	6.93				2.5		8.1	1.6	400				32	<0.02	2.7	0.08	2.67	28	0.11	20.1	3.07	1.26	0.4	4.37	7.4
MFPIT	Mount Fitch Pit	1/03/2017		1.53	212.2	7.37				2.4		7.6	1.6	<100				31.4	<0.02	2.6	0.04	0.66	68	0.02	22	10.6	0.66	<0.1	2.6	2
MFPIT	Mount Fitch Pit	4/04/2017			187.07	7.17		94		1.4		7.9	1.5	100				26.6	<0.02	2.6	0.08	2.37	30	0.12	21	3.41	0.95	<0.1	3.15	8.6
MFPIT	Mount Fitch Pit	26/04/2017	86		197.72	7.48		97		2.5		8.1	1.5	<100				32.4	<0.02	2.5	0.04	0.78	18	0.02	20.6	1.43	0.37	0.1	3.06	2.3
MFPIT	Mount Fitch Pit	11/10/2017	192		244.57	8.27		111		3		8.4	1.9	<100			118	41.8	<0.02	3.2	0.26	2.67	8	0.02	26.7	10.5	0.9	0.3	16.3	3.3
MFPIT	Mount Fitch Pit	26/04/2018	92		160.01	7.64		90		2.5		7.9	1.5	<100			90.5	39.8	<0.02	2.6	0.07	0.9	18	0.03	20.4	4.1	0.89	0.2	3.49	4.4
No. of samples			4.0	9.0	15.0	15.0	9.0	4.0	9.0	6.0	8.0	6.0	15.0	15.0	0.0	0.0	2.0	15.0	15.0	14.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Minimum			66.0	1.4	160.0	6.4	6.4	90.0	85.4	1.4	0.0	7.6	1.5	100.0	0.0	0.0	90.5	1.5	0.0	2.3	0.0	0.5	8.0	0.0	18.7	1.1	0.4	0.1	2.1	0.3
Maximum			192.0	3.3	244.6	8.3	100.0	111.0	112.2	3.0	0.0	8.4	1.9	600.0	0.0	0.0	118.0	49.1	0.0	3.2	0.3	6.1	90.0	0.1	26.7	33.9	1.3	0.4	16.3	8.6
Mean			109.0	2.3	198.6	7.5	76.5	98.0	95.9	2.4		8.0	1.6	266.7			104.3	21.7		2.6	0.1	1.8	32.5	0.0	21.1	7.0	0.8	0.2	5.1	2.9
Standard Deviation			56.4	0.7	23.1	0.6	28.9	9.1	8.0	0.5		0.3	0.1	173.2			19.4	16.8		0.2	0.1	1.4	22.9	0.0	1.9	8.1	0.3	0.1	4.2	2.5
80th Percentile			132.0	2.9	213.7	8.2	94.4	102.6	100.4	2.5		8.1	1.7	400.0			112.5	35.6		2.7	0.1	2.4	41.6	0.1	22.0	9.6	1.0	0.3	4.8	4.5
MFus	Mt Fitch upstream	9/01/2014		10.97	23.4	8.44	11.2		4		<5		2.3	100				212	<0.02	<0.1	0.11	0.73	78	0.08	0.2	2.24	0.14	0.6	0.36	<0.1
MFus	Mt Fitch upstream	6/02/2014		4.11	17.2	7.56	1.2		5		<5		1.5	<100				52.8	<0.02	0.5	0.1	0.71	92	0.12	0.5	4.1	0.18	0.9	0.14	2.3
MFus	Mt Fitch upstream	6/03/2014		2.82	27.8	7.68	9.2		5		<5		2.4	<100				65.7	<0.02	0.1	0.05	0.2	46	0.1	0.3	1.42	0.04	0.5	0.091	0.7
MFus	Mt Fitch upstream	6/03/2015		5.32	21.3	6.49	6.4		5		<5		2.3	<100				36.7	<0.02	0.2	0.06	0.26	42	0.05	0.4	2.36	0.11	0.5	0.091	1.5
MFus	Mt Fitch upstream	2/04/2015		3.52	20	7.32	6		5		<5		2.3	400				63.3	<0.02	0.2	0.07	0.21	46	0.06	0.4	2.39	0.1	0.6	0.089	2.5
MFus	Mt Fitch upstream	2/02/2017	18.6		24.5	7.22				1.3		7	1.4	<100				31.2	<0.02	0.6	6.38	3.49	216	0.06	1.5	351	3.8	0.8	0.045	4.7
MFus	Mt Fitch upstream	1/03/2017		0	17.3	8.09				1.1		6.7	2.4	<100				77	<0.02	0.2	0.29	1.6	138	0.07	0.2	9.57	0.21	0.5	0.155	3.1
MFus	Mt Fitch upstream	4/04/2017			18.39	8.35		5		1.6		7	2.4	<100				46.8	<0.02	0.20.3	0.22	3.17	70	0.27	0.4	6.95	0.98	0.7	0.133	30.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500		20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
No. of samples			1.0	6.0	8.0	8.0	5.0	1.0	5.0	3.0	5.0	3.0	8.0	8.0	0.0	0.0	0.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum			18.6	0.0	17.2	6.5	1.2	5.0	4.0	1.1	0.0	6.7	1.4	100.0	0.0	0.0	0.0	31.2	0.0	0.1	0.1	0.2	42.0	0.1	0.2	1.4	0.0	0.5	0.0	0.7
Maximum			18.6	11.0	27.8	8.4	11.2	5.0	5.0	1.6	0.0	7.0	2.4	400.0	0.0	0.0	0.0	212.0	0.0	0.6	6.4	3.5	216.0	0.3	1.5	351.0	3.8	0.9	0.4	30.3
Mean			18.6	4.5	21.2	7.6	6.8	5.0	4.8	1.3		6.9	2.1	250.0				73.2		0.3	0.9	1.3	91.0	0.1	0.5	47.5	0.7	0.6	0.1	6.4
Standard Deviation				3.7	3.8	0.6	3.8		0.4	0.3		0.2	0.4	212.1				58.1		0.2	2.2	1.3	59.6	0.1	0.4	122.7	1.3	0.2	0.1	10.6
80th Percentile			18.6	5.3	24.1	8.2	9.6	5.0	5.0	1.5		7.0	2.4	340.0				72.5		0.5	0.3	2.5	119.6	0.1	0.5	8.5	0.7	0.8	0.1	4.4
MP@Ramp	Main Pit at Ramp	28/08/2017	13.6		209.03	5.89		12		1.7		7.3	3.8	70800			78.8	17.9	0.04	9.5	1.44	8.53	8	0.03	13.8	155	22	0.8	3.02	5.2
MP@Ramp	Main Pit at Ramp	13/09/2017	74		213.5	5.89		11		1.9		7.2	3.7	69700				11.7	0.04	9.2	2.06	7.96	6	0.03	13.3	165	21.5	0.9	2.95	5
MP@Ramp	Main Pit at Ramp	12/10/2017	16		226.35	7.02		12		1.9		7.4	4	75100			84.6	34.7	0.02	10.1	2.08	4.37	16	0.05	14.4	132	17.4	1	3.35	5
MP@Ramp	Main Pit at Ramp	9/11/2017	26.4		231.85	6.4		11		1.8		7.3	4	73700				32.8	0.02	9.8	3.01	9.58	6	0.08	14	121	17.4	1	2.95	4.7
MP@Ramp	Main Pit at Ramp	7/12/2017	15.2		220.04	7.04		11		2		7.2	4	78700			87.8	61.4	0.04	10.5	4.61	17.9	14	0.12	15	98.2	18.6	1	3.08	8.5
MP@Ramp	Main Pit at Ramp	4/01/2018	21.2		212.95	7.15		11		1.9		7.2	4	81900			91.4	48.1	0.04	10.8	8.94	32.2	18	0.04	15.6	82.2	19.8	1.1	3.13	9.5
No. of samples			6.0	0.0	6.0	6.0	0.0	6.0	0.0	6.0	0.0	6.0	6.0	6.0	0.0	0.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum			13.6	0.0	209.0	5.9	0.0	11.0	0.0	1.7	0.0	7.2	3.7	69700.0	0.0	0.0	78.8	11.7	0.0	9.2	1.4	4.4	6.0	0.0	13.3	82.2	17.4	0.8	3.0	4.7
Maximum			74.0	0.0	231.9	7.2	0.0	12.0	0.0	2.0	0.0	7.4	4.0	81900.0	0.0	0.0	91.4	61.4	0.0	10.8	8.9	32.2	18.0	0.1	15.6	165.0	22.0	1.1	3.4	9.5
Mean			27.7		219.0	6.6		11.3		1.9		7.3	3.9	74983.3			85.7	34.4	0.0	10.0	3.7	13.4	11.3	0.1	14.4	125.6	19.5	1.0	3.1	6.3
Standard Deviation			23.1		8.8	0.6		0.5		0.1		0.1	0.1	4663.2			5.3	18.5	0.0	0.6	2.8	10.2	5.3	0.0	0.8	32.0	2.0	0.1	0.2	2.1
80th Percentile			26.4		226.4	7.0		12.0		1.9		7.3	4.0	78700.0			89.2	48.1	0.0	10.5	4.6	17.9	16.0	0.1	15.0	155.0	21.5	1.0	3.1	8.5
MPI	Main Pit at Inlet	6/08/2010			165	7.8					<5		3.4	61000				9	<0.2	7.1	64.3	41.5	<200	<0.1	11.6	723	58.4	0.8	3.93	22
MPI	Main Pit at Inlet	19/06/2012			187.1	6.2	5.3		6.466		<5			71300					0.08	7.6	74.6	54.4	44	<0.01	12.6	818	65.7		3.89	24.7
MPI	Main Pit at Inlet	16/07/2012			218.3	5.41	1.7		2.074					89400					0.12	8.9	102	102	308	0.02	14.6	1320	94.3		8.56	38.2
MPI	Main Pit at Inlet	14/08/2012			207.8	5.77					<5			92200					0.12	9.3	113	119	188	0.04	15.2	1400	102		13.4	43
MPI	Main Pit at Inlet	10/09/2012			232.7	4.57																								
MPI	Main Pit at Inlet	10/09/2012			232.7	4.57					<5			95100					0.14	9.4	118	138	38	0.16	15.3	1470	105		13.6	45.6
MPI	Main Pit at Inlet	11/10/2012			265	4.95	2.4		2.928		<5			98400					0.18	9.8	115	141	24	0.33	15.8	1530	104		14.2	45.6
MPI	Main Pit at Inlet	6/11/2012			262	5	2.2		2.684		<5		4.2	103000				185	0.18	10.2	118	153	48	0.9	16.5	1530	105	0.9	13.3	48
MPI	Main Pit at Inlet	4/12/2012			296.6	5.38	1.6		1.952		<5			99900				205	0.18	10.1	148	257	60	1.25	16	1630	128		13.8	52.6
MPI	Main Pit at Inlet	3/01/2013			288	6.77	0.6		0.732		<5		3.9	103000				193	0.18	10.5	141	247	56	1.22	16.4	1610	124	0.9	12.1	51.1
No. of samples			0.0	0.0	10.0	10.0	6.0	0.0	6.0	0.0	8.0	0.0	3.0	9.0	0.0	0.0	0.0	4.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.0	9.0	9.0
Minimum			0.0	0.0	165.0	4.6	0.6	0.0	0.7	0.0	0.0	0.0	3.4	61000.0	0.0	0.0	0.0	9.0	0.1	7.1	64.3	41.5	24.0	0.0	11.6	723.0	58.4	0.8	3.9	22.0
Maximum			0.0	0.0	296.6	7.8	5.3	0.0	6.5	0.0	0.0	0.0	4.2	103000.0	0.0	0.0	0.0	205.0	0.2	10.5	148.0	257.0	308.0	1.3	16.5	1630.0	128.0	0.9	14.2	52.6
Mean					235.5	5.6	2.3		2.8				3.8	90366.7				148.0	0.1	9.2	110.4	139.2	95.8	0.6	14.9	1336.8	98.5	0.9	10.8	41.2
Standard Deviation					42.8	1.0	1.6		1.9				0.4	14693.8				93.0	0.0	1.2	27.3	74.3	99.9	0.5	1.7	336.0	23.3	0.1	4.2	11.0
80th Percentile					269.6	6.3	2.4		2.9				4.1	101140.0				197.8	0.2	10.1	127.2	190.6	136.8	1.2	16.2	1562.0	112.6	0.9	13.7	49.2
MPO	Main Pit at Outlet	19/06/2012			186.4	6.21	5.1		6.222		<5			71800					0.1	7.6	68.8	40.3	24	0.02	12.7	758	70.6		2.52	27.8
MPO	Main Pit at Outlet	16/07/2012			217.9	5.71	0.7		0.854					89200					0.14	8.9	109	108	184	0.03	14.5	1340	98		7.7	39.7
MPO	Main Pit at Outlet	14/08/2012			207.1	5.25					<5			91600					0.12	9.3	118	138	78	0.09	15	1430	105		13.3	43.9
MPO	Main Pit at Outlet	10/09/2012			235.6	4.56																								
MPO	Main Pit at Outlet	10/09/2012			235.6	4.56					<5			95000					0.14	9.5	123	144	28	0.12	15.3	1490	106		13	46
MPO	Main Pit at Outlet	11/10/2012			263.7	4.68	2.4		2.928		<5			98200					0.16	9.8	116	140	36	0.28	15.9	1540	104		13.7	43.2
MPO	Main Pit at Outlet	6/11/2012			263.7	4.9	2.2		2.684		<5		4.3	103000				182	0.16	10.2	118	155	42	0.49	16.4	1540	107	0.9	13.5	47
MPO	Main Pit at Outlet	4/12/2012			292.8	4.91	1.4		1.708		<5			101000				202	0.18	10.4	146	256	48	1.08	16.4	1640	127		13.4	53.4
MPO	Main Pit at Outlet	3/01/2013			140	5.64	0.4		0.488		<5		3.9	103000				187	0.16	10.6	138	241	54	1.16	16.5	1610	122	0.9	11.7	49.8
MPO	Main Pit at Outlet	31/01/2013			309.5	6.33	<1		1.22		<5		3.9	107000				190	0.18	11.1	144	253	58	1.45	17.2	1620	125	0.9	12.7	53.4
MPO	Main Pit at Outlet	27/02/2013		0.73	277.5	4.89	<1		1.22		<5		4.2	118000				183	0.2	12.5	142	248	98	1.66	18.9	1750	118	0.9	13.8	54.3
MPO	Main Pit at Outlet	27/03/2013		0.34	330.7	5.52	1.7		2.074		<5		4	128000				130	0.24	13.7	153	285	78	1.73	20.4	1690	126	0.8	14.8	60
MPO	Main Pit at Outlet	24/04/2013		1.28	341.7	6.9	2.5		3.05		<5		3.9	138000				87.7	0.24	15.2	162	304	42	1.28	22.7	1720	133	0.9	15.3	67.1
MPO	Main Pit at Outlet	23/05/2013		1.35	365.4	6.68	<1		1.22		<5		4	138000				83.4	0.24	15.7	154	285	24	1.09	22.9	1690	127	0.8	15.2	64.4
MPO	Main Pit at Outlet	18/06/2013		0.71	344.3	5.91	2.2		2.684		<5		3.9	138000				87.1	0.22	15.9	152	279	16	0.99	23.1	1700	123	0.9	15.9	62.7
MPO	Main Pit at Outlet	16/07/2013		3.37	347	5.67	1.4		1.708		<5		3.9	140000				105	0.26	16	152	259	12	0.82	23.1	1660	124	0.9	15.1	63.4
MPO	Main Pit at Outlet	20/08/2013		0.82	409.5	4.25			<1		<5		4.2	154000				232	0.24	17.4	166	292	198	0.34	25.3	2070	135	0.9	22.5	71.3
MPO	Main Pit at Outlet	10/09/2013		0.94	402.7	4.41					<5		4.4	161000				228	0.26	17.9	167	286	88	0.34	25.6	2140	136	1	23.1	73.7
MPO	Main Pit at Outlet	8/10/2013		0.3	380.6	4.55					<5		4.6	166000				237	0.24	18.5	174	302	94	0.45	26.6	2200	143	1	23.3	78.9
MPO	Main Pit at Outlet	7/11/2013		0.45	390	6.54					<5		4.5	160000				243	0.28	18.5	166	293	102	0.9	26.4	2180	135	1	23.3	70
MPO	Main Pit at Outlet	4/12/2013		1.62	439.6	5.01	13.7		16.714		<5		4.4	155000				251	0.26	17.8	177	321	104	1.96	25.5	2090	141	1	22.6	77.5
MPO	Main Pit at Outlet	8/01/2014		2.23	351.9	6	14.7		1		<5		4.4	142000				23.2	0.2	15.5	162	224	12	0.04	24.3	1670	128	1	8.65	55.9
MPO	Main Pit at Outlet	5/02/2014		8.04	104.9	7.71	7.6		6		<5		2.4	34700				31.3	0.04	4.4	39.4	47	40	0.1	6.7	338	35	0.6	3.79	12.6
MPO	Main Pit at Outlet	5/03/2014		3.04	166.6	8.54	13.4		16.348		<5		3.8	44600				42	0.04	4.9	47.9	42.9	16	0.07	9.5	239	44.5	0.4	3.42	10.3
MPO	Main Pit at Outlet	2/04/2014		3.31	154	7.67	16.2		19.764		<5		3.6	41800				42.4	0.04	4.9	36	37.8	52	0.04	9.5	202	36	0.4	3.53	7.9
MPO	Main Pit at Outlet	29/04/2014		4.05	173.3	7.99	14.2		13		<5		3.8	45100				35.2	0.04	5.1	35.2	32.8	42	0.1	9.8	212	35.7	0.5	3.15	9.8
MPO	Main Pit at Outlet	28/05/2014		2.85	156.6	6.65	10.4		12.688		<5		3.4	42700				13	0.04	5.1	21.8	23.7	18	0.05	9.2	141	30.8	0.4	2.62	7.1
MPO	Main Pit at Outlet	3/06/2014		3.68	141.7	6.78	12.4		12		1.2		3.3	42500		2		24.9	0.04	5.2	31	32.6	42	0.11	9.2	200	32	0.5	3.03	11
MPO	Main Pit at Outlet	24/06/2014		3.18	161.1	6.91	0.69		6		<5		3.3	60200				2.9	0.06	7.1	41.1	26.8	12	0.03	11.1	485	46	0.6	2.53	15.9
MPO	Main Pit at Outlet	23/07/2014		1.72	213.8	5.75	4.5		2 5.49		<5		3.7	78000				4.1	0.08	8.7	65.4	31.5	16	<0.01	13.5	883	68.7	0.6	1.88	25.1
MPO	Main Pit at Outlet	19/08/2014		3.68	221	6.48	3.4		4.148		<5		3.8	83000				18.7	0.1	9.3	78.1	53.3	54	0.01	14	1120	80.2	0.6	2.71	30.6
MPO	Main Pit at Outlet	17/09/2014		8.89	236.4	7.08	2.4		2.928		<5		3.8	87400				36.2	0.1	9.3	87.8	56.9	60	0.05	14.8	1240	82.8	0.7	3.97	33.9
MPO	Main Pit at Outlet	14/10/2014		1.49	234.6	6.94			<1		<5		4	91100				39	0.12	9.8	88.6	62.3	8	0.06	15.3	1270	84.5	0.7	3.55	34.6
MPO	Main Pit at Outlet	12/11/2014		4.84	219.3	5.98	9.6		11.712		<5		4.1	91100				42.3	0.12	9.7	88.5	65.8	14	0.15	15.2	1240	83.8	0.7	3.28	34.2

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0			10.00	500		20.00		17		
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600		17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500		13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900		11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200		200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00			1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
MPO	Main Pit at Outlet	11/12/2014		4.87	237.7	5.26	2.2		2.684		<5		4.1	92600				58.6	0.16	10.1	90.8	85.1	18	0.81	15.3	1260	84.9	0.8	3.29	37
MPO	Main Pit at Outlet	7/01/2015		10.1	220.5	5.67	7.8		2		<5		3.7	82900				58.4	0.14	8.9	90.8	74	60	0.27	14.3	908	76.3	1.1	2.52	38.2
MPO	Main Pit at Outlet	4/02/2015		4.93	153	6.13	10.6		11		<5		4	40300				39.6	0.04	4.5	36.8	42.2	60	0.04	8.4	264	35.9	0.8	2.53	9.2
MPO	Main Pit at Outlet	5/03/2015		5.18	128.2	6.15	15.6		11		<5		3.6	30000				53.5	0.04	3.8	27.6	32.7	40	0.05	6.9	186	28.8	0.6	1.87	7.7
MPO	Main Pit at Outlet	1/04/2015		2.67	127.4	7.16	17.6		12		<5		3.7	33400				82.3	0.02	4.2	23.8	31.6	62	0.08	7.7	189	27.1	0.4	2.34	8.1
MPO	Main Pit at Outlet	28/04/2015		2.24	152.3	6.68	16.4		12		<5		3.6	36900				13.5	0.04	4.6	15.5	29.6	38	0.05	8.2	150	22.8	0.6	2.17	6.6
MPO	Main Pit at Outlet	26/05/2015		3.57	181.1	7.27	16.2		8		<5		3.5	53000				17.3	0.04	6.6	14.1	26.5	22	0.03	10.4	199	28.5	0.7	2.05	10.6
MPO	Main Pit at Outlet	1/07/2015		1.4	200.8	7.1	10		8		1.7		3.6	62200				20.3	0.04	7.6	14.9	23.9	12	0.02	11.7	240	29.5	0.7	2.13	11.7
MPO	Main Pit at Outlet	23/07/2015		12.4	249.4	6.72	4.7		4		<5		4.1	80700				21.4	0.08	9.4	53.1	27.5	20	0.02	14.3	832	57.9	0.8	1.83	22.6
MPO	Main Pit at Outlet	19/08/2015		14.22	226.9	6.42	8.2		10.004		<5		4.4	89900				2.6	0.08	10.1	59.6	30.9	16	<0.01	15.5	952	63.1	0.9	1.89	24
MPO	Main Pit at Outlet	16/09/2015		1.98	253.6	6.68	5		3		<5		4.3	85600				1.9	0.08	9.8	52.9	18.5	4	<0.01	14.7	902	60.4	0.8	1.08	21.5
MPO	Main Pit at Outlet	13/10/2015		4.24	252	7.45	15.4		10		<5		4.3	88800				3.3	0.08	9.9	40.1	11.8	4	0.02	15.7	763	51.5	0.9	1.1	17.9
MPO	Main Pit at Outlet	10/11/2015		1.43	252	6.63	4.3		3		<5		4.7	95800				5.6	0.08	11	41.5	15	6	0.02	16.6	763	54.5	1	1.06	20.1
MPO	Main Pit at Outlet	11/12/2015		7.68	246.3	6.67	3.8		2		<5		4.1	90800				13.9	0.08	10.2	40.1	20.8	8	0.07	15.3	722	53	0.9	1.28	20.3
MPO	Main Pit at Outlet	6/01/2016		4.92	124.9	6.92	10		8		<5		3.2	41500				26	0.08	4.6	51.9	40.7	36	<0.01	8.7	373	37.5	1.3	2.39	14.1
MPO	Main Pit at Outlet	4/02/2016		4.65	127.5	6.86	13		10		1.4		3.4	32200				44	0.02	4.1	31.9	45.7	68	0.06	7.3	218	32.3	0.7	2.44	8
MPO	Main Pit at Outlet	3/03/2016		2.54	131.2	7.55	20.2		14		<5		3.6	32100				49.4	<0.02	4.1	20.2	38.9	96	0.05	7.7	160	25.5	0.5	2.45	5.6
MPO	Main Pit at Outlet	31/03/2016		6.66	178.1	7.01	18.4		16		<5		3.9	47700				36.4	0.04	5.6	26	36.9	70	0.04	11.1	229	33.5	0.6	2.56	7.6
MPO	Main Pit at Outlet	28/04/2016		2.54	165.4	6.51	24.8		19		<5		3.7	48200				19	0.04	5.8	20.4	28.8	24	0.02	11	233	29.9	0.6	2.42	7
MPO	Main Pit at Outlet	24/05/2016		1.33	162.8	7.4	12.2		13		<5		3.8	52300				22.5	0.04	6.3	20.9	23.2	44	0.05	11.5	253	28	0.8	2.59	6.9
MPO	Main Pit at Outlet	21/06/2016		2.71	168.6	7.55	16		37		<5		3.5	53400				17.5	0.04	6.5	12.4	18.8	24	0.05	11.3	246	25.9	0.9	2.14	7.3
MPO	Main Pit at Outlet	21/07/2016		3.9	240	5.83	13.8		10		<5		3.7	72300				17	0.04	9.1	13.9	17.1	12	0.02	13.8	360	31	1	2.43	11.5
MPO	Main Pit at Outlet	18/08/2016		1.7	246.7	7.08	9.6		9		<5		4	86500				25.8	0.08	10.7	22.3	16.1	16	0.03	15.7	573	41.7	1	2.4	15.8
MPO	Main Pit at Outlet	1/02/2017	13.2		97.6	7.1				1.4		7.1	3.1	25800				75	0.02	3.6	20.5	41.2	96	0.1	5.8	137	23.6	0.7	2.48	6.6
MPO	Main Pit at Outlet	27/02/2017		0	132.4	6.94				1.3		7.1	3.4	42000				58.1	0.04	4.5	26.5	28.3	28	0.05	9	189	32.4	0.5	2.55	11.4
MPO	Main Pit at Outlet	7/04/2017			117.55	6.3		13		1.3		7.2	3.7	26,800				72.7	0.02	3.6	17.7	32	94	0.13	6.5	108	29.2	0.5	2.83	14.9
MPO	Main Pit at Outlet	24/04/2017	23		117.46	5.8		14		1.5		7.4	3.7	31400				49.2	0.02	3.9	18	33.1	76	0.1	7.4	134	27.4	0.6	2.82	6.9
MPO	Main Pit at Outlet	31/05/2017			127.76	6.76		14		1.4		7	3.6	37600				26.6	0.02	5	17.7	28.8	42	0.05	8.4	164	24.5	0.7	2.84	7
MPO	Main Pit at Outlet	21/06/2017			207.66	6.36		12		1.8		7.2	3.8	68500				13.8	0.04	9	20	16.8	12	0.08	13.2	354	27	0.9	2.92	11.2
MPO	Main Pit at Outlet	1/03/2018	15.2		124.54	6.41		11		1.1		7.2	3	34100				45.6	0.04	4	32.3	28	42	0.04	8	203	32	0.5	3.34	8.8
No. of samples			3.0	48.0	64.0	64.0	49.0	5.0	51.0	7.0	55.0	7.0	57.0	63.0	0.0	1.0	0.0	58.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	57.0	63.0	63.0
Minimum			13.2	0.0	97.6	4.3	0.4	11.0	0.5	1.1	1.2	7.0	2.4	25800.0	0.0	2.0	0.0	1.9	0.0	3.6	12.4	11.8	4.0	0.0	5.8	108.0	22.8	0.4	1.1	5.6
Maximum			23.0	14.2	439.6	8.5	24.8	14.0	37.0	1.8	1.7	7.4	4.7	166000.0	0.0	2.0	0.0	251.0	0.3	18.5	177.0	321.0	198.0	2.0	26.6	2200.0	143.0	1.3	23.3	78.9
Mean			17.1	3.6	222.9	6.3	9.1	12.8	8.4	1.4	1.4	7.2	3.8	79925.4		2.0		68.5	0.1	9.0	73.7	100.2	46.7	0.3	14.2	878.8	69.0	0.8	6.7	29.2
Standard Deviation			5.2	3.1	86.0	1.0	6.3	1.3	7.3	0.2	0.3	0.1	0.4	39857.3				72.6	0.1	4.3	55.3	104.1	39.0	0.5	5.7	682.1	41.3	0.2	6.7	22.8
80th Percentile			19.9	4.9	283.6	7.1	15.4	14.0	12.8	1.5	1.6	7.2	4.2	105400.0		2.0		98.1	0.2	11.1	143.2	245.2	73.6	0.6	17.0	1632.0	122.6	0.9	13.5	53.4
TC@LB	Tailings Creek at lease boundary	28/03/2012			207.7	6.06	21.6		26.352		<5		2.5	66,800				13	0.6	10.8	233	633	<20	0.1	13.7	221	231	0.3	1.21	241
TC@LB	Tailings Creek at lease boundary	31/01/2013			215.3	7.11	25		30.5		<5		2.7	48,500		3		4.7	0.02	9.6	1.03	49.4	4	0.04	11.5	15.2	13.7	1	0.662	7.1
TC@LB	Tailings Creek at lease boundary	27/02/2013		10.93	116.2	6.06	13.615		18.3		<5		3	27,600		2		15.1	0.04	5.7	3.5	26.9	32	0.06	7	42.4	10.2	0.8	0.703	4.9
TC@LB	Tailings Creek at lease boundary	27/03/2013		6.4	280.7	6.34	34.4		35		<5		3.7	82,500		3		7.5	0.26	15.4	103	117	14	0.08	18.2	150	119	0.6	1.85	100
TC@LB	Tailings Creek at lease boundary	24/04/2013		1.47	278.7	7.42	35		42.7		<5		2.9	91,000		4		6.1	0.86	16	332	663	20	0.25	19.9	216	366	0.4	1.73	356
TC@LB	Tailings Creek at lease boundary	23/05/2013		1.52	454.2	7.59	89		108.58		<5		4.8	116,000		2		22.8	0.16	30.5	43.8	145	4	0.02	30.7	229	57.7	0.8	6.5	44.8
TC@LB	Tailings Creek at lease boundary	18/06/2013		0.59	163.7	8.07	89.2		86		<5		4.4	105,000		1		12.7	0.06	28.4	7.66	68.7	6	0.03	28.9	52.4	27.9	0.4	7.17	18.7
TC@LB	Tailings Creek at lease boundary	4/12/2013		5.81	208.1	7.11	31.33		30		<5		2.7	51,600		5		8.3	0.04	10.9	3.27	33.6	8	0.03	12.3	124	16.5	0.9	0.554	11.7
TC@LB	Tailings Creek at lease boundary	8/01/2014		4.56	228.2	6.21	47		44		<5		3.3	60,700		2		6.9	0.04	15	2.12	24	26	0.06	15.5	28.9	13.9	0.6	1.96	6.6
TC@LB	Tailings Creek at lease boundary	5/02/2014		6.1	132	7.4	12.2		12		<5		1.9	42,600		2		16.5	0.1	8.4	39.5	119	26	0.23	8.6	160	44.9	0.4	0.627	48.7
TC@LB	Tailings Creek at lease boundary	5/03/2014		1.7	237.8	7.88	22.8		25		<5		2.8	65,800		2		22.1	0.62	11	249	572	36	0.24	14.4	287	265	0.4	1.47	238
TC@LB	Tailings Creek at lease boundary	2/04/2014		2.31	484	7.81	63		76.86		<5		3.5	89,300		2		10.1	0.38	21.9	133	411	28	0.14	23.3	258	146	0.6	2.83	150
TC@LB	Tailings Creek at lease boundary	29/04/2014		1.78	373.3	7.9	84		80		<5		4.5	83,400		3		8.9	0.1	23.2	20.9	150	8	0.03	25	160	34.5	0.8	4.27	29
TC@LB	Tailings Creek at lease boundary	7/01/2015		19.66	128.5	6.88	18.6		17		<5		2.9	31,400				45.5	0.02	7.1	5.46	31.3	30	0.09	7.9	74.7	9.33	1.3	0.7	7.2
TC@LB	Tailings Creek at lease boundary	4/02/2015		2.06	232.2	6.1	26.6		24		<5		2.8	65,600		2		19	0.62	11	236	510	20	0.22	14.2	214	261	0.5	1.46	237
TC@LB	Tailings Creek at lease boundary	5/03/2015		1.9	236.6	6.37	27.8		25		<5		3.2	66,500		3		41.3	0.32	12.2	131	263	22	0.11	14.6	184	142	0.4	1.05	131
TC@LB	Tailings Creek at lease boundary	31/03/2015		3.25	243.6	7.04	29		28		<5		3.2	70,300		2		63.7	0.38	12.8	157	248	24	0.13	15.7	165	171	0.2	1.39	132
TC@LB	Tailings Creek at lease boundary	28/04/2015		0.89	469.4	8.39	68		84		<5		4.7	118,000		2		9	0.1	29.9	21.2	104	10	0.07	30.6	84.8	36.9	0.5	7.35	22.3
TC@LB	Tailings Creek at lease boundary	3/03/2016		1.91	275.5	7.08	34.2		32		<5		2.8	75,100		1		12	0.66	14.2	238	543	32	0.3	17.3	228	263	0.5	1.72	243
TC@LB	Tailings Creek at lease boundary	30/03/2016		1.55	234.7	7.87	37.2		34		<5		3.1	73,400		2		12.7	0.38	14.5	154	232	40	0.24	17.4	152	175	0.5	1.76	139
TC@LB	Tailings Creek at lease boundary	27/04/2016		1.01	390	7.39	50		68		<5		4.1	101,000		3		8.2	0.06	25.4	12.2	59.3	12	0.05	25.5	64.2	30.7	0.6	4.85	15.4
TC@LB	Tailings Creek at lease boundary	24/05/2016		3.48	396.2	6.68	52		70		<5		4.9	109,000		4		9.8	0.06	24.6	9.37	59.6	8	0.04	29.3	106	29	0.7	6.51	18.1
TC@LB	Tailings Creek at lease boundary	30/01/2017	16		177.8	6.95				2.4		7.5	2.8	56,500		2		31	0.3	10.6	132	286	26	0.17	12.3	181	150	0.4	0.839	128
TC@LB	Tailings Creek at lease boundary	27/02/2017			220.3	6.67				2.1		7.4	2.5	68,700			88.1	34.3	0.74	11.1	286	783	28	0.23	14.6	327	321	0.3	1.32	317
TC@LB	Tailings Creek at lease boundary	10/04/2017			207.89	6.47																							
TC@LB	Tailings Creek at lease boundary	24/04/2017	35.8		282.59	6.32		37		3		7.7	2.9	81,500			114	18.9	0.7	15	245	539	22	0.09	18.6	300	276	0.4	1.83	259
TC@LB	Tailings Creek at lease boundary	30/05/2017			527.82	7.19		121		6.2		8	5.1	116,000		5.6	232	11	0.08	33.4	21	121	18	0.05	36	609	40.9	4.6	9.21	19.9
TC@LB	Tailings Creek at lease boundary	28/02/2018	19.2		141.52	6.9		16		1		7.4	2.4	52,200		1.1	68.4	16.2	0.4	9.2	152	364	14	0.17	11	177	172	0.4	0.819	151
TC@LB	Tailings Creek at lease boundary	29/01/2019			489.5	5.28		30		5.4		7.7	4.2	83,200	190	2	117	19.6	0.04	16	10.8	37.8	14	0.05	18.8	222	23.8	1.3	0.99	11
TC@LB	Tailings Creek at lease boundary	4/02/2019			37.46	5.97		5		1.5		7	1.1	8,400	30	4	15.2	201	0.02	2.2	2.93	29	100	0.6	2.3	35.9	4.53	0.7	0.525	13.8
TC@LB	Tailings Creek at lease boundary	20/03/2019			182.82	6.35		32		2		7.8	3.1	43,600	110	3	77.8	27.8	0.02	10.8	3.98	26.4	14	0.04	12.4	70.5	10.7	1	1.93	4.6
TC@LB	Tailings Creek at lease boundary	9/04/2019			200.1	7.73		32		2		7.6	3.1	55,100	120	1	85.2	44.1	0.12	11.9	36.6	58.2	24	0.1	13.5	76.4	49.9	0.6	2.07	31.2
TC@LB	Tailings Creek at lease boundary	9/05/2019			363.2	7.37		72		4		8.3	4.2	98,500	200	3	176	33.9	0.02	26.6	2.77	21.3	8	0.03	26.7	61.6	10.2	1	5.24	5.3
No. of samples			3.0	20.0	33.0	33.0	22.0	8.0	22.0	10.0	22.0	10.0	32.0	32.0	5.0	28.0	9.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Minimum			16.0	0.6	37.5	5.3	12.2	5.0	12.0	1.0	0.0	7.0	1.1	8400.0	30.0	1.0	15.2	4.7	0.0	2.2	1.0	21.3	4.0	0.0	2.3	15.2	4.5	0.2	0.5	4.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																				1000	300.0		100					3000
ADWG 2015 Health																	2.0			2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water					4500											5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
Maximum			35.8	19.7	527.8	8.4	89.2	121.0	108.6	6.2	0.0	8.3	5.1	118000.0	200.0	5.6	232.0	201.0	0.9	33.4	332.0	783.0	100.0	0.6	36.0	609.0	366.0	4.6	9.2	356.0
Mean			23.7	3.9	267.2	7.0	41.4	43.1	45.3	3.0		7.6	3.3	72025.0	130.0	2.6	108.2	25.4	0.3	15.8	94.7	229.0	21.9	0.1	17.7	164.9	110.1	0.7	2.6	98.2
Standard Deviation			10.6	4.5	121.7	0.7	23.6	36.9	27.5	1.7		0.4	0.9	27010.8	68.9	1.2	63.4	34.9	0.3	8.0	103.9	229.8	17.5	0.1	7.9	117.6	109.2	0.8	2.4	106.2
80th Percentile			29.2	5.9	383.3	7.7	60.8	58.0	75.5	4.3		7.8	4.2	97000.0	192.0	3.0	140.6	33.3	0.6	24.3	217.8	490.2	28.0	0.2	25.4	226.8	219.8	0.9	4.7	219.8
TCus@LB	Tailings Creek up stream at lease boundary	29/01/2019			91.89	5.55		5		9.9		6.4	3.3	900	100	3	10	491	<0.02	0.5	0.31	0.69	114	0.37	2.1	28.2	0.35	8.9	0.943	2.4
TCus@LB	Tailings Creek up stream at lease boundary	4/02/2019			15.68	6.17		2		1.5		6.5	1.1	300	<10	3	1.8	220	<0.02	0.2	0.08	0.41	74	0.17	0.3	4.64	0.15	1.2	0.408	4
TCus@LB	Tailings Creek up stream at lease boundary	20/03/2019			30.04	5.92		5		2		6.4	2.6	100	20	2	2.3	103	<0.02	0.1	0.12	0.21	64	0.13	0.5	5.79	0.16	1	0.564	2.1
TCus@LB	Tailings Creek up stream at lease boundary	9/04/2019			45.1	6.21		7		<2		6.5	2.2	100	20	1	1.9	76.9	<0.02	0.1	0.08	0.24	64	0.11	0.4	2.51	0.12	0.8	0.422	3.3
TCus@LB	Tailings Creek up stream at lease boundary	9/05/2019			27.53	5.92		6		2		6.8	2.9	200	30	2	3.2	66.6	<0.02	0.2	0.16	0.17	32	0.07	0.7	9.83	0.09	1.1	0.23	3.7
No. of samples			0.0	0.0	5.0	5.0	0.0	5.0	0.0	5.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum			0.0	0.0	15.7	5.6	0.0	2.0	0.0	1.5	0.0	6.4	1.1	100.0	20.0	1.0	1.8	66.6	0.0	0.1	0.1	0.2	32.0	0.1	0.3	2.5	0.1	0.8	0.2	2.1
Maximum			0.0	0.0	91.9	6.2	0.0	7.0	0.0	9.9	0.0	6.8	3.3	900.0	100.0	3.0	10.0	491.0	0.0	0.5	0.3	0.7	114.0	0.4	2.1	28.2	0.4	8.9	0.9	4.0
Mean					42.0	6.0		5.0		3.9		6.5	2.4	320.0	42.5	2.2	3.8	191.5		0.2	0.2	0.3	69.6	0.2	0.8	10.2	0.2	2.6	0.5	3.1
Standard Deviation					29.8	0.3		1.9		4.0		0.2	0.8	334.7	38.6	0.8	3.5	178.2		0.2	0.1	0.2	29.4	0.1	0.7	10.4	0.1	3.5	0.3	0.8
80th Percentile					54.5	6.2		6.2		5.2		6.6	3.0	420.0	58.0	3.0	4.6	274.2		0.3	0.2	0.5	82.0	0.2	1.0	13.5	0.2	2.7	0.6	3.8
WCtrib@LB	Wandering Creek tributary at Lease Boundary	29/01/2019			1481.3	5.15		1		1.1		5.8	6.9	716000	1090	2	770	31.6	0.5	28.3	107	7.83	340	0.05	170	789	103	1.6	1.86	243
WCtrib@LB	Wandering Creek tributary at Lease Boundary	6/02/2019			617.79	5.26		4		1.3		6.8	4.5	309000	450	2	329	50	0.12	11.2	27.1	2.13	180	0.04	73.2	238	31.7	1	0.722	61.2
WCtrib@LB	Wandering Creek tributary at Lease Boundary	22/03/2019			932.32	6.88		8		<2		6.7	6.3	466000	630	3	505	18.6	0.1	18.4	34.9	1.47	730	0.02	111	358	27.3	0.7	0.725	52.2
WCtrib@LB	Wandering Creek tributary at Lease Boundary	11/04/2019			368.4	6.31		9		<2		6.7	3.9	233000	330	1	251	44.5	0.02	9.3	8.41	0.55	274	0.03	55.4	135	8.13	0.9	0.369	9.1
WCtrib@LB	Wandering Creek tributary at Lease Boundary	10/05/2019			752.43	6.22		9		2		7	5.2	329000	500	3	361	67.9	0.02	13.1	9.86	0.6	542	0.05	79.8	195	6.94	0.9	0.402	10.8
No. of samples			0.0	0.0	5.0	5.0	0.0	5.0	0.0	5.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum			0.0	0.0	368.4	5.2	0.0	1.0	0.0	1.1	0.0	5.8	3.9	233000.0	330.0	1.0	251.0	18.6	0.0	9.3	8.4	0.6	180.0	0.0	55.4	135.0	6.9	0.7	0.4	9.1
Maximum			0.0	0.0	1481.3	6.9	0.0	9.0	0.0	2.0	0.0	7.0	6.9	716000.0	1090.0	3.0	770.0	67.9	0.5	28.3	107.0	7.8	730.0	0.1	170.0	789.0	103.0	1.6	1.9	243.0
Mean					830.4	6.0		6.2		1.5		6.6	5.4	410600.0	600.0	2.2	443.2	42.5	0.2	16.1	37.5	2.5	413.2	0.0	97.9	343.0	35.4	1.0	0.8	75.3
Standard Deviation					418.0	0.7		3.6		0.5		0.5	1.2	190303.2	294.3	0.8	204.5	18.7	0.2	7.6	40.5	3.0	221.4	0.0	45.0	262.4	39.4	0.3	0.6	96.7
80th Percentile					1042.1	6.4		9.0		1.7		6.8	6.4	516000.0	722.0	3.0	558.0	53.6	0.2	20.4	49.3	3.3	579.6	0.1	122.8	444.2	46.0	1.1	1.0	97.6
WCusEB	Wandering Creek upstream East Branch Finniss River	10/08/2010			665	8					5		13.9	202000				4	<0.2	59.7	0.4	7.2	<200	<0.1	46.5	6.7	5.2	0.4	1.52	5
WCusEB	Wandering Creek upstream East Branch Finniss River	21/12/2011			538	7.64	115	140.3			5			102000					<0.02	37.2	1.23	7.36	318	0.47	30.8	97.3	4.73		3.93	4.3
WCusEB	Wandering Creek upstream East Branch Finniss River	1/02/2012			146.6	6.98	20	24.4		<5		7.6		44200					0.2	4.6	61.7	53.4	40	0.94	9	67.2	44.8	0.6	1.8	47.2
WCusEB	Wandering Creek upstream East Branch Finniss River	29/02/2012			326.6	5.81																								
WCusEB	Wandering Creek upstream East Branch Finniss River	28/03/2012			223.9	6.33	12.8	15.616		<5		3		81100				48	0.26	7.6	51.4	113	20	0.3	18.5	120	54.5	0.4	6.6	69.3
WCusEB	Wandering Creek upstream East Branch Finniss River	26/04/2012			314	6.31	17.6	21.472		<5		7.7		89100				60	0.2	14.8	112	32.6	100	0.3	25.1	1160	64.2	1	8.72	56
WCusEB	Wandering Creek upstream East Branch Finniss River	21/05/2012			446	7.68	143	174.46		<5	7.68	29.8		98300				6.6	0.06	24.4	5.53	16.7	26	0.26	32.9	75.3	12.9	0.5	3.61	8.3
WCusEB	Wandering Creek upstream East Branch Finniss River	16/07/2012			521	6.75	170	207.4						100000					<0.02	45.5	0.64	9.27	12	<0.01	37.7	21.8	5.68		1.94	4
WCusEB	Wandering Creek upstream East Branch Finniss River	4/12/2012			628	7.15	182	222.04		5				86400				17.8	<0.02	45.4	1.33	12.3	68	0.81	37.9	63.2	5.64		7.39	3.2
WCusEB	Wandering Creek upstream East Branch Finniss River	31/01/2013			380.2	7.15	34	41.48		<5		5.5		129000				47.5	0.28	12.2	48.3	91.6	38	0.18	30.5	140	52.8	0.9	9.04	70.8
WCusEB	Wandering Creek upstream East Branch Finniss River	27/02/2013	3.48		294.3	5.97	25	30.5		<5		4		119000				34	0.34	10.4	50.5	105	26	0.21	27.3	130	53	0.5	8.81	73.5
WCusEB	Wandering Creek upstream East Branch Finniss River	27/03/2013	8.34		387.8	7.03	73	79		<5		33.2		97100				17.5	0.08	9.2	9.76	22	18	0.37	20.6	28.9	11.7	0.8	2.83	16.4
WCusEB	Wandering Creek upstream East Branch Finniss River	24/04/2013	2.79		251.1	7.15	36.8	44.896		<5		3.4		89000				44.8	0.34	8.5	59.2	93.3	24	0.16	21.6	165	62.9	0.5	10.5	85.5
WCusEB	Wandering Creek upstream East Branch Finniss River	23/05/2013	11.21		588	6.62	52	63.44		<5		7.4		229000				75.8	0.64	24	139	103	28	0.03	51	719	140	0.9	20.2	174
WCusEB	Wandering Creek upstream East Branch Finniss River	18/06/2013	2.82		337.4	7.12	59	79		<5		7.5		102000				24.2	0.2	20.3	33.3	44.2	34	0.07	29.2	210	39.4	0.3	5.56	52
WCusEB	Wandering Creek upstream East Branch Finniss River	16/07/2013	0.66		519	7.84	246	194		<5		13.7		107000				10.7	<0.02	44.2	0.66	9.92	74	0.07	38.3	22.1	3.41	0.3	6.44	3.5
WCusEB	Wandering Creek upstream East Branch Finniss River	19/08/2013	1.07		619	7.72	200	208		<5		14.3		120000				11.3	<0.02	50.4	0.38	8.35	4	<0.01	42.3	13.7	2.72	0.4	4.33	2.4
WCusEB	Wandering Creek upstream East Branch Finniss River	10/09/2013	0.89		629	7.97	230	280.6		<5		16.4		93000				11.6	<0.02	50.6	0.59	13.2	6	<0.01	41.8	25.7	2.85	0.8	4.76	2
WCusEB	Wandering Creek upstream East Branch Finniss River	8/10/2013	1.28		582	7.33	266	324.52		<5		17.3		56800				18	<0.02	48.4	1.34	14.6	8	0.02	41	73.2	3.53	0.8	7.12	1.7
WCusEB	Wandering Creek upstream East Branch Finniss River	7/11/2013	1.03		539	6.71	201	245.22		<5		16.3		61700				16	<0.02	46.4	1.16	8.09	6	0.02	39.1	85.1	3.6	0.9	4.76	2.3
WCusEB	Wandering Creek upstream East Branch Finniss River	4/12/2013	5.13		1259	6.95	53	64.66		<5		10		591000				73.5	2.28	50.9	326	501	2	0.16	132	694	343	2.2	52.5	502
WCusEB	Wandering Creek upstream East Branch Finniss River	8/01/2014	4.54		400.4	7.1	136	42		<5		4.8		164000				57.8	0.36	15.3	64.7	121	20	0.04	40.1	188	68.4	0.6	14.3	90.9
WCusEB	Wandering Creek upstream East Branch Finniss River	5/02/2014	16.13		156.8	6.62	12.6	15		<5		3.7		50400				40.2	0.18	6.1	34	45.5	36	0.88	11.4	61.7	34.5	0.6	2.77	38.6
WCusEB	Wandering Creek upstream East Branch Finniss River	5/03/2014	2.26		257.9	7.9	23.6	26		<5		3.5		76,100				53	0.26	8.5	50	102	150	1.29	18.7	165	49.2	0.9	5.36	65
WCusEB	Wandering Creek upstream East Branch Finniss River	2/04/2014	6.93		356.2	7.58	57.4	70.028		<5		4.8		126000				83.3	0.48	16.9	148	89.7	110	0.49	33.4	1080	127	1	16	139
WCusEB	Wandering Creek upstream East Branch Finniss River	29/04/2014	4.31		693	7.81	182	139		<5		13.2		196000				14.9	0.24	41.1	50.1	51.7	28	0.1	54.6	353	77.5	1.5	8.65	69.1
WCusEB	Wandering Creek upstream East Branch Finniss River	28/05/2014	0.54		530	7.32	176	214.72		<5		14.1		80500				4.3	0.04	41.9	0.94	8.83	16	0.03	36.6	54.2	4.43	0.4	4.27	3.7
WCusEB	Wandering Creek upstream East Branch Finniss River	24/06/2014	1.69		553	6.74	198	203		<5		15		110000				2.6	<0.02	47.5	0.55	8.08	6	0.02	41.7	27.2	3.74	0.5	5.15	2.9
WCusEB	Wandering Creek upstream East Branch Finniss River	23/07/2014	0.06		535	7.03	212	201		<5		14.9		117000				2.4	<0.02	51.2	0.64	8.15	6	0.03	44.1	37.2	3.63	0.2	5.04	3
WCusEB	Wandering Creek upstream East Branch Finniss River	19/08/2014	0.68		642	7.25	202	213		<5		14.9		121000				2.5	<0.02	53.6	0.61	7.35	8	0.02	44.8	36.8	3.41	0.2	4.53	2.2
WCusEB	Wandering Creek upstream East Branch Finniss River	17/09/2014	1.45		603	6.9	346	232		<5		14.7		104000				4.6	<0.02	51.8	1.32	8.01	8	0.03	44.8	126	3.76	0.2	3.88	2.5
WCusEB	Wandering Creek upstream East Branch Finniss River	14/10/2014	2.01		590	7.2	260	237		<5		15.9		66900				7.6	<0.02	50.5	2.96	6.41	8	0.03	44.5	395	5.26	0.4	5.87	1.5
WCusEB	Wandering Creek upstream East Branch Finniss River	7/01/2015	11.9		445.5	6.94	63.71	56		<5		16.4		156000				88.3	0.32	16.3	95.1	98.4	22	1.02	35.9	113	82.8	1.3	6.6	75.1
WCusEB	Wandering Creek upstream East Branch Finniss River	4/02/2015	3.74		271	5.85	43	32		<5		4		82000				48.1	0.24	9.4	43.9	80.9	64	0.35	20.8	148	44.3	0.7	7.42	52.2
WCusEB	Wandering Creek upstream East Branch Finniss River	5/03/2015	1.52		230.2	6.55	23.2	24		<5		3.3		72900				53.1	0.18	8	33.5	76.4	42	0.2	18.3	82	37.4	0.5	5.29	47.5
WCusEB	Wandering Creek upstream East Branch Finniss River	31/03/2015	1.76		341.8	6.83	38.6	40		<5		5.6		109000				91	0.32	11.3	54.6	113	22	0.19	27.6	182	63.2	0.5	10.2	73
WCusEB	Wandering Creek upstream East Branch Finniss River	28/04/2015	3.7		425	7.57	136	155		<5		13.7		41400				9.2	0.04	22.9	1.88	12.1	120	0.05	27.6	164	6.03	0.5	8.75	2.4
WCusEB	Wandering Creek upstream East Branch Finniss River	26/05/2015	1.97		637.1	7.94	222	187		<5		18		91800				8.2	<0.02	40.8	0.69	10.2	4	<0.01	39.8	21.6	2.94	0.4	7.05	2
WCusEB	Wandering Creek upstream East Branch Finniss River	1/07/2015	1.15		720.8	7.73	190	199		1.2		16.9		129000				11.9	<0.02	48.7	0.69	8.02	6	<0.01	44.6	27.2	2.78	0.2	5.78	2.5
WCusEB	Wandering Creek upstream East Branch Finniss River	23/07/2015	2.12		759.9	6.27	204	203		<5		18.2		129000				25.5	<0.02	52.1	0.65	8.08	6	0.02	46.3	23.9	2.92	0.4	5.64	3
WCusEB	Wandering Creek upstream East Branch Finniss River	18/08/2015	1.67		466.6	8.03		231		<5		20.3		98400				1.8	<0.02	51.8	0.49	13.1	4	<0.01	45.3	16.4	2.92	0.3	5.19	1.9
WCusEB	Wandering Creek upstream East Branch Finniss River	10/12/2015	1.51		1456.7	7.57	82	76		15		31		629000				7.6	0.18	109	18.1	23	18	0.04	97.1	93.8	42.8	3.1	6.35	32.6
WCusEB	Wandering Creek upstream East Branch Finniss River	6/01/2016	3.14		254.5	6.6	22.6	27.572		<5		4		95400				55.5	0.28	9.9	46.9	97.8	44	0.18	21.8	123	48.3	1	7.44	66.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Surface Water Quality Data

ADWG 2015 Aesthetic																					1000	300.0		100					3000
ADWG 2015 Health																	2.0				2000		10.00	500			20.00		17	
ANZECC 2000 (FW) 80% (And any location if LDWQO not avalible)																150	0.8		13	2.5		9.40	3600			17.00			31
ANZECC 2000 FW 90%																80	0.4			1.8		5.60	2500			13.00			15
ANZECC 2000 FW 95%																55	0.2			1.4		3.40	1900			11.00			8
ANZECC 2000 Long-term Irrigation																5000	10		50	200	200.0	2000.00	200			200.00		10	2000
ANZECC 2000 Stock Water				4500												5000	10.0		1000	400		100.00				1000.00		200	20000
Location code	**Location Name**	**Sampled Date**	**Alkalinity (Bicarbonate as CaCO3) Field**	**Turb_fd**	**EC (field)**	**pH (Field)**	**Alkalinity (Bicarbonate as CaCO3) (Disolved)**	**Alkalinity (Bicarbonate)**	**Bicarbonate (Disolved)**	**Chloride**	**Chloride (Disolved)**	**pH (Lab)**	**Sodium (Disolved)**	**Sulphate (Disolved)**	**TDS**	**TOC**	**Hardness as CaCO3**	**Aluminium (Disolved)**	**Cadmium (Disolved)**	**Calcium (Disolved)**	**Cobalt (Disolved)**	**Copper (Disolved)**	**Iron (Disolved)**	**Lead (Disolved)**	**Magnesium (Disolved)**	**Manganese (Disolved)**	**Nickel (Disolved)**	**Potassium (Disolved)**	**Uranium (Disolved)**	**Zinc (Disolved)**
Note Numbers in Red text (<) are below detection limit.			mg/L	NTU	uS/cm	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L	µg/L
WCusEB	Wandering Creek upstream East Branch Finniss River	3/02/2016		1.93	230.8	7.01	20		20		1.3		3.6	82600				34.2	0.2	8.7	37.5	86.5	28	0.11	19.6	84.1	40.4	0.7	6.48	52.3
WCusEB	Wandering Creek upstream East Branch Finniss River	3/03/2016		2.65	321	6.75	24		31		<5		3.3	97700				45.8	0.28	9.8	75	107	148	0.58	24.5	653	61.9	0.7	9.63	67.6
WCusEB	Wandering Creek upstream East Branch Finniss River	30/03/2016		1.38	237.2	7.25	10.2		31		<5		4.2	83300				15.5	0.16	8.9	31.8	66.5	18	0.03	21.9	116	37.4	0.6	5.73	46.2
WCusEB	Wandering Creek upstream East Branch Finniss River	27/04/2016		8.2	475.9	6.81	152		136		<5		13.6	83400				5.7	<0.02	28.5	2.95	7.43	42	0.02	31.3	236	7.16	0.5	5.32	2.4
WCusEB	Wandering Creek upstream East Branch Finniss River	24/05/2016		2.37	545	6.97	140		229		<5		18.7	88400				8.3	<0.02	40.3	1.21	7.52	10	0.01	39.1	57.1	4.12	0.6	6.18	2
WCusEB	Wandering Creek upstream East Branch Finniss River	21/06/2016		2.55	587.1	7.36	198		201		<5		19.1	89200				9.7	<0.02	43.4	0.57	9.13	6	<0.01	39.7	26.8	3.03	0.8	6.67	1.7
WCusEB	Wandering Creek upstream East Branch Finniss River	20/07/2016		1.17	666.9	7.33	202		197		5		19.8	115000				13.1	<0.02	49.2	0.59	7.96	8	0.02	43.2	27.8	3.19	1.3	8.47	1.6
WCusEB	Wandering Creek upstream East Branch Finniss River	31/01/2017	46		440.6	7.06							20.4	120000				53.1	0.12	13.4	14.7	29.7	26	0.53	25.3	41.7	24.5	0.8	2.4	23.4
WCusEB	Wandering Creek upstream East Branch Finniss River	27/02/2017		2.4	215.7	6.82				1.1		7.1	3	67900				54.8	0.18	6.6	38.7	71.3	60	0.15	16.4	103	43.9	0.6	4.67	53.2
WCusEB	Wandering Creek upstream East Branch Finniss River	6/04/2017			274.87	7.35		23		1.2		7.3	3.3	87100				60.9	0.22	8.5	48.4	62.8	20	0.06	20.8	122	51	0.7	5.89	60
WCusEB	Wandering Creek upstream East Branch Finniss River	27/04/2017	37		366.1	7.23		36		1.2		7.6	4.8	119000				87.2	0.4	11.4	78.5	108	66	0.06	29	214	89.8	0.6	11.9	104
WCusEB	Wandering Creek upstream East Branch Finniss River	31/05/2017			449.9	6.84		169		3.2		8.1	20.4	69800			200	15.8	0.04	26.7	3.34	18	18	0.02	32.5	291	9.7	1.3	8.47	6.3
WCusEB	Wandering Creek upstream East Branch Finniss River	21/06/2017			520.61	7.06		182		2.1		8.2	21.7	83300				12.1	0.02	31.9	1.01	12.2	8	0.02	35.2	36.4	4.45	0.6	8.29	3.7
WCusEB	Wandering Creek upstream East Branch Finniss River	17/07/2017	164		556.06	7.02		220		1.1		8.2	21.4	57200				9.7	<0.02	34.9	0.63	14	8	<0.01	36.5	30.8	3.72	0.5	10.3	2.2
WCusEB	Wandering Creek upstream East Branch Finniss River	1/03/2018	2.8		209.8	6.45		17		1.6		7.4	2.9	63400			79.8	34.5	0.14	7.3	34.6	63.1	44	0.09	14.9	109	35.5	0.8	4.57	40
WCusEB	Wandering Creek upstream East Branch Finniss River	2/01/2019			650.4	7.46		101		12		7.8	24.7	204000	450	7	284	71.3	0.04	46.2	3.91	15.3	46	0.08	40.9	90.3	13.8	1	6.48	7.7
WCusEB	Wandering Creek upstream East Branch Finniss River	6/02/2019			363.99	6.38		33		2.6		7.8	5.4	144,000	270	2	178	92.7	0.18	21.2	32.6	74	22	0.1	30.3	94.8	35.8	1	6.97	44.5
WCusEB	Wandering Creek upstream East Branch Finniss River	21/03/2019			590.9	6.85		43		4		7.6	7.8	231000	410	3	281	73.2	0.34	32.7	63.1	120	14	0.06	48.5	213	68.2	1.1	13.1	85.2
WCusEB	Wandering Creek upstream East Branch Finniss River	10/04/2019			275.9	7.05		32		<2		7.3	4.6	128000	210	2	160	57.9	0.26	12.5	49.5	108	26	0.07	31.3	140	52.2	0.7	8.48	70
WCusEB	Wandering Creek upstream East Branch Finniss River	10/05/2019			561.1	6.83		30		2		7.6	5.5	212000	350	3	251	98	0.5	19	93.4	211	8	0.07	49.5	224	102	0.7	18.3	138
WCusEB	Wandering Creek upstream East Branch Finniss River	24/07/2019			776.86	8.05		168		<2			24	148000	390	2	280	43.9	<0.02	45.9	0.63	9.12	6	0.01	40.1	3.19	3.89	0.2	5.92	4.9
No. of samples			64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
Minimum			2.8	0.1	146.6	5.8	10.2	17.0	15.0	1.1	1.2	7.1	2.9	41400.0	210.0	2.0	79.8	1.8	0.0	4.6	0.4	6.4	2.0	0.0	9.0	3.2	2.7	0.2	1.5	1.5
Maximum			164.0	16.1	1456.7	8.1	346.0	220.0	324.5	12.0	15.0	8.2	33.2	629000.0	450.0	7.0	284.0	98.0	2.3	109.0	326.0	501.0	318.0	1.3	132.0	1160.0	343.0	3.1	52.5	502.0
Mean			62.5	3.3	481.8	7.1	121.6	87.8	127.7	2.9	5.4	7.7	12.2	124092.1	346.7	3.2	214.2	34.9	0.3	29.9	34.4	55.1	36.0	0.2	35.9	164.3	37.0	0.7	7.7	44.1
Standard Deviation			70.2	3.4	227.7	0.5	89.4	75.6	89.9	3.2	4.6	0.3	7.9	98568.4	90.7	1.9	73.2	28.7	0.4	20.2	51.6	72.8	49.6	0.3	18.1	230.0	51.0	0.5	6.8	71.0
80th Percentile			93.2	4.3	622.6	7.6	201.8	168.8	211.0	3.2	5.0	8.0	18.8	129000.0	410.0	3.0	280.6	58.3	0.3	48.6	53.3	98.2	44.0	0.3	44.3	201.2	58.9	0.9	8.8	69.7
WCusHAR	Wandering Creek upstream HAR discharge creeks	1/02/2012			574	5.1					<5		2	291000				552	1.2	19.7	169	511	80	1	59.4	297	167	1	29.4	313
WCusHAR	Wandering Creek upstream HAR discharge creeks	29/02/2012			906	4.89																							
WCusHAR	Wandering Creek upstream HAR discharge creeks	28/03/2012			359.3	7.21	12.8		15.616		<5		2.8	346000				608	1.08	23.6	225	686	316	1.41	70.3	379	223	1	48.9	310
WCusHAR	Wandering Creek upstream HAR discharge creeks	26/04/2012			1392	4.82					<5		4	849000				4160	3.66	55.6	800	1830	232	2.81	174	1440	831	1.5	165	1180
WCusHAR	Wandering Creek upstream HAR discharge creeks	4/12/2012			547	7.39	192		234.24		5			49300				14.1	0.02	40.8	2.81	7.22	196	0.65	32.7	287	5.85		1.7	2.5
WCusHAR	Wandering Creek upstream HAR discharge creeks	30/01/2019			1799.9	4.71		<1		1.9		4.8	5.6	857000	1280	1	923	2420	2.42	59.1	444	1500	274	3.39	188	1050	454	1.6	106	672
No. of samples			0.0	0.0	6.0	6.0	2.0	1.0	2.0	1.0	4.0	1.0	4.0	5.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Minimum			0.0	0.0	359.3	4.7	12.8	0.0	15.6	1.9	5.0	4.8	2.0	49300.0	1280.0	1.0	923.0	14.1	0.0	19.7	2.8	7.2	80.0	0.7	32.7	287.0	5.9	1.0	1.7	2.5
Maximum			0.0	0.0	1799.9	7.4	192.0	0.0	234.2	1.9	5.0	4.8	5.6	857000.0	1280.0	1.0	923.0	4160.0	3.7	59.1	800.0	1830.0	316.0	3.4	188.0	1440.0	831.0	1.6	165.0	1180.0
Mean					929.7	5.7	102.4		124.9	1.9	5.0	4.8	3.6	478460.0	1280.0	1.0	923.0	1550.8	1.7	39.8	328.2	906.8	219.6	1.9	104.9	690.6	336.2	1.3	70.2	495.5
Standard Deviation					560.3	1.3	126.7		154.6				1.6	359672.6				1718.4	1.4	18.0	307.4	744.8	90.1	1.2	71.0	525.8	319.9	0.3	65.3	450.1
80th Percentile					1392.0	7.2	156.2		190.5	1.9	5.0	4.8	4.6	850600.0	1280.0	1.0	923.0	2768.0	2.7	56.3	515.2	1566.0	282.4	2.9	176.8	1128.0	529.4	1.5	117.8	773.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)		Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic				300.0		1000		100				3000
ADWG 2015 Health					2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%			150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%			80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%			55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation			5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500		5000		10.0	400	1000		1000.00	100.00	200	20000

Table B-1. Baseline (Unimpacted) Groundwater Quality Data, Bore RN023140

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN023140 (Dry Season)																							
RN023140	16-Jul-08	7.3	504	7.3		234	286	2	3	30	46	3	1	0.2	<20	<0.02	0.1	0.3	0.4	0.18	<0.01	1	1
RN023140	4-Dec-08	8.6	527	8.0		198	241	1	3	28	43	3	1	3	<200	<0.2	<0.1	0.3	11	0.14	<0.2	1	1
RN023140	16-Jul-09	8.0	512	8.1		177	216	3	3	26	39	3	3	5	<20	<0.02	1	0.1	1	0.12	<0.01	5	2
RN023140	1-Sep-09	7.8	518	7.7		193	236	4	4	28	45	3	3	6	<20	<0.02	2	0.1	0.2	0.41	<0.01	14	3
RN023140	13-Oct-09	7.2	533	7.0		187	228	2	3	28	44	3	2	10	<20	<0.02	1	0.1	1	0.20	<0.01	5	1
RN023140	18-Nov-09	7.2	460	7.7		197	240	2	3	29	42	2	1	5	<20	<0.02	0.2	0.1	1	0.18	<0.01	4	0.4
RN023140	5-Aug-10	7.1	496			259	315	2	<5	29	45	3	1	3	<200	<0.2	0.1	<0.1	1	0.10	<0.1	1	12
RN023140	26-Sep-12	7.2	557			249	304	2	<5	29	43	3	1	7	2.0	<0.02	4	0.3	1	0.97	0.07	2	2
No. of samples		8.0	8.0	6.0	0.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum		7.1	460.0	7.0	0.0	186.9	228.0	1.5	2.5	28.0	42.2	2.4	0.9	3.0	2.0	0.0	0.1	0.1	0.2	0.1	0.1	0.7	0.4
Maximum		7.8	557.0	7.7	0.0	258.8	315.1	3.8	3.5	29.2	45.3	2.9	2.6	10.1	2.0	0.0	3.6	0.3	1.0	1.0	0.1	14.2	12.0
Mean		7.3	512.7	7.5		217.0	264.6	2.1	2.9	28.7	43.9	2.6	1.5	6.3	2.0		1.3	0.1	0.7	0.4	0.1	5.1	3.7
Standard Deviation		0.3	36.9	0.4		34.1	41.4	0.9	0.5	0.5	1.3	0.2	0.7	2.6			1.5	0.1	0.3	0.4		5.4	4.8
80th Percentile		7.3	537.8	7.7		251.0	306.0	2.2	3.2	29.1	45.1	2.7	1.7	7.5	2.0		2.2	0.2	0.9	0.5	0.1	6.8	4.6
RN023140 (Wet Season)																							
RN023140	8-Jan-09	7.9	499	7.9		201	245	1	3	27	43	3	1	0.3	<20	<0.02	0.1	0.1	1	0.35	<0.01	1	1
RN023140	18-Mar-09	8.0	472	7.9		187	228	2	2	25	43	3	1	1	<20	<0.02	1	0.1	2	0.18	0.06	1	2
RN023140	14-Apr-11	7.2	518	7.9		236	288	2	<5	29	43	3	1	10	<200	<0.2	1	<0.1	2	0.30	0.20	1	1
RN023140	15-Feb-12	7.2	564			234	285	2	<5	31	45	3	1	11	<2	<0.02	6	0.1	2	0.34	1.09	1	2
RN023140	27-Apr-09	7.1	509	7.7		208	254	2	3	29	44	3	1	1	<20	<0.02	1	0.2	1	0.05	<0.01	1	1
No. of samples		5.0	5.0	4.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.1	472.3	7.7	0.0	186.9	228.0	1.2	2.4	25.4	42.6	2.5	0.9	0.3	0.0	0.0	0.1	0.1	1.3	0.1	0.1	0.7	0.7
Maximum		8.0	564.0	7.9	0.0	236.0	287.9	1.7	2.6	31.2	45.0	2.7	1.3	11.2	0.0	0.0	5.7	0.2	2.5	0.4	1.1	0.9	2.2
Mean		7.5	512.5	7.9		213.2	260.1	1.5	2.5	28.4	43.7	2.6	1.1	4.8			1.7	0.1	1.7	0.2	0.5	0.7	1.3
Standard Deviation		0.5	33.5	0.1		21.3	26.0	0.2	0.1	2.2	0.9	0.1	0.2	5.3			2.3	0.1	0.5	0.1	0.6	0.1	0.6
80th Percentile		7.9	527.2	7.9		234.4	286.0	1.6	2.6	29.7	44.3	2.6	1.2	10.2			2.3	0.2	2.0	0.3	0.7	0.8	1.7

Red numbers indicate that the concentration was below the indicated detection limit

Table B-2. Baseline (Unimpacted) Groundwater Quality Data, Bores RN022085 and RN025168

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN022085 (Dry Season)																							
RN022085	11-Jun-08	7.5	366	7.4		144	176	2	2	23	27	2	1	5	<20	<0.02	0.2	1.7	139	1.32	0.71	4	3
RN022085	22-Oct-08	7.4	381	7.8		193	235	1	2	35	31	2	1	2	<20	<0.02	0.1	0.5	199	0.28	0.05	1	2
RN022085	29-Oct-08	7.1	475			197	240	1	<5	37	33	2	0.3	120	<200	<0.2	1	0.8	121	1.40	0.20	7	3
RN022085	4-Dec-08	8.0	530	7.9		199	243	2	2	39	34	2	1	6	<200	<0.2	<0.1	1.3	679	0.73	0.12	8	3
RN022085	16-Jul-09	7.1	417	7.2		160	195	1	2	26	25	2	1	2	<20	<0.02	0.4	6.8	280	4.43	<0.01	1	4
RN022085	1-Sep-09	7.3	384	7.2		157	191	0.4	2	28	27	2	1	3	<20	<0.02	1	2.9	267	1.74	0.02	1	2
RN022085	13-Oct-09	7.2	423	6.9		145	177	1	2	26	26	2	2	3	60.0	<0.02	1	3.3	329	1.66	0.32	1	6
RN022085	18-Nov-09	7.1	382	7.6		155	189	1	2	27	25	2	2	1	20.0	<0.02	1	2.6	349	1.50	0.09	1	3
No. of samples		8.0	8.0	7.0	0.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Minimum		7.1	365.9	6.9	0.0	144.3	176.0	0.4	1.9	23.1	24.5	1.5	0.3	1.3	20.0	0.0	0.1	0.5	121.0	0.3	0.0	0.6	2.1
Maximum		8.0	529.9	7.9	0.0	199.2	243.0	1.9	2.4	38.9	34.1	2.3	2.4	120.0	60.0	0.0	1.3	6.8	679.0	4.4	0.7	7.8	5.6
Mean		7.3	419.8	7.4		168.6	205.8	1.0	2.2	30.1	28.4	1.9	1.2	17.6	40.0		0.7	2.5	295.4	1.6	0.2	2.8	3.1
Standard Deviation		0.3	56.4	0.4		23.5	28.6	0.6	0.2	5.8	3.7	0.2	0.7	41.4	28.3		0.4	2.0	175.8	1.2	0.2	3.0	1.2
80th Percentile		7.4	454.2	7.8		195.1	238.0	1.5	2.4	36.1	32.2	2.0	1.7	5.2	52.0		1.0	3.1	341.0	1.7	0.3	5.6	3.4
RN022085 (Wet Season)																							
RN022085	20-Jan-09	7.2	520	7.5		197	240	0.4	2	40	36	2	0.3	3	<20	<0.02	0.4	0.7	637	0.30	0.02	5	1
RN022085	18-Mar-09	7.3	484	7.3		184	224	0.1	2	36	34	2	0.3	2	<20	<0.02	1	0.6	306	0.36	0.07	2	2
RN022085	23-Apr-09	7.0	519	7.4		191	233	1	2	35	34	2	1	2	<20	<0.02	1	0.7	415	0.23	0.03	2	2
No. of samples		3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.0	483.5	7.3	0.0	183.6	224.0	0.1	2.2	34.7	33.6	1.8	0.3	1.7	0.0	0.0	0.4	0.6	306.0	0.2	0.0	1.9	0.5
Maximum		7.3	520.0	7.5	0.0	196.7	240.0	0.7	2.4	40.1	35.5	2.0	0.7	2.7	0.0	0.0	0.6	0.7	637.0	0.4	0.1	4.7	2.1
Mean		7.1	507.5	7.4		190.4	232.3	0.4	2.3	36.8	34.5	1.9	0.4	2.0			0.5	0.7	452.7	0.3	0.0	3.0	1.4
Standard Deviation		0.2	20.8	0.1		6.6	8.0	0.3	0.1	2.9	1.0	0.1	0.2	0.6			0.1	0.1	168.7	0.1	0.0	1.5	0.8
80th Percentile		7.2	519.6	7.5		194.4	237.2	0.6	2.4	38.3	35.1	2.0	0.5	2.3			0.6	0.7	548.2	0.3	0.1	3.8	1.9
RN025168 (Wet Season)																							
RN025168	7-Apr-09	6.1	366			95	116	2		0.2	2			21	<200	<0.2	4	2	9	2.10	2.20	0.4	5

Red numbers indicate that the concentration was below the indicated detection limit

Table B-3. Seepage water quality data, Dyson's WRD and Dyson's (backfilled) Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
Seepage from Dyson's (backfilled) Open Pit (Wet Season)																							
DOCC	19-Jan-11					0	0	1,460	<5	126	234	5	2	11,600	200.0	1.4	18,500	15,900	34,900	12900.00	4.80	937	562
DOCC	16-Mar-11	3.4	2872			0	0	1,730	<5	158	259	4	1	17,000	11300.0	1.7	27,300	18,400	39,900	15500.00	6.84	1,030	705
DOCC	13-Apr-11	3.4	3051	3.3		0	0	1,900	<5	180	282	5	1	18,900	9920.0	2.0	29,600	20,500	41,800	16300.00	6.96	1,070	792
DOCC	10-May-11	3.4	4041		720	0	0	2,940	<5	275	450	6	2	26,400	9700.0	2.9	35,700	32,600	72,400	25700.00	9.60	1,700	1,170
DOCC	6-Jun-11	3.8	4247		488	0	0	3,450	5	293	566	8	2	38,000	2000.0	5.0	47,300	36,200	75,200	28000.00	7.00	2,020	1,290
DOCC	1-Feb-12	3.6	2502		116	0	0	1,540	<5	143	239	4	1		834.0	1.5	18,000	16,700	39,600	13500.00	4.71	813	590
DOCC	24-Apr-12	4.0	3909		456	0	0	2,730	5	257	435	7	1	22,200	102.0	2.4	31,600	27,800	63,800	22200.00	5.42	1,680	982
DOCC	31-Jan-19	4.1	2155.9	4.2		0		1,130	3.7	121	188	5.4	1.4	7800	176.0	0.7	9940	10,100	24,900	7840.00	3.09	524	319
No. of samples		7.0	7.0	2.0	4.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum		3.4	2155.9	3.3	116.0	0.0	0.0	1130.0	3.7	121.0	188.0	3.8	0.9	7800.0	102.0	0.7	9940.0	10100.0	24900.0	7840.0	3.1	524.0	319.0
Maximum		4.1	4247.0	4.2	720.0	0.0	0.0	3450.0	5.0	293.0	566.0	7.5	1.7	38000.0	11300.0	5.0	47300.0	36200.0	75200.0	28000.0	9.6	2020.0	1290.0
Mean		3.7	3254.0	3.8	445.0	0.0	0.0	2110.0	4.6	194.1	331.6	5.3	1.3	20271.4	4279.0	2.2	27242.5	22275.0	49062.5	17742.5	6.1	1221.8	801.3
Standard Deviation		0.3	815.8	0.6	248.9	0.0	0.0	825.1	0.8	70.1	134.2	1.3	0.3	9990.8	5049.5	1.3	11708.4	9017.1	18729.8	6918.1	2.0	517.0	327.6
80th Percentile		4.0	4014.6	4.0	580.8	0.0	0.0	2856.0	5.0	267.8	444.0	6.3	1.5	25560.0	9832.0	2.7	34060.0	30680.0	68960.0	24300.0	7.0	1692.0	1094.8
Seepage from Dyson's (backfilled) Open Pit (Dry Season)																							
DOCC	21-Dec-11	3.8	4549		272	0	0	2,990	5	271	515				144.0	2.5	29,000	22,700	51,500	19700.00	5.03	1,590	860
Seepage from Dyson's WRD (Wet Season), near creek																							
DOHC	19-Jan-11	4.5	862			0	0	461	<5	60	70	3	1	2,960	1300.0	0.2	1,290	2,420	5,950	1900.00	0.80	101	105
DOHC	16-Mar-11	4.3	1106			0	0	579	<5	73	81	3	0.4	9,020	2740.0	0.5	4,630	3,100	7,380	2590.00	2.38	155	134
DOHC	13-Apr-11	4.2	1356	4.1		0	0	766	<5	93	104	3	1	14,900	1880.0	0.7	5,040	4,110	9,770	3380.00	22.80	224	231
DOHC	10-May-11	4.2	1579		360	0	0	1,020	<5	133	144	4	1	11,800	560.0	0.8	3,800	6,340	14,900	4930.00	5.08	217	257
DOHC	6-Jun-11	4.3	1968		148	0	0	1,400	<5	190	206	5	1	9,100	800.0	1.0	2,740	9,710	23,300	7420.00	1.30	175	311
DOHC	5-Jul-11	4.4	1986		80	0	0	1,430	<5	194	216	6	1	4,800	240.0	0.6	936	8,110	21,400	6280.00	0.85	104	202
DOHC	1-Feb-12	4.7	657		24	0	0	324	<5	44	50	2	0.2		690.0	0.2	924	637	2,410	633.00	0.81	76	62

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
DOHC	29-Feb-12	4.3	1658		82																		
DOHC	28-Mar-12	4.2	1273		78																		
DOHC	24-Apr-12	4.3	1747		140	0	0	984	<5	128	145	4	1	9,270	574.0	0.6	1,370	6,160	15,600	4620.00	1.22	184	195
DOHC	21-May-12	4.2	2103	4.2	100	0	0	1,440	<5	192	212	5	1	7,380	472.0	0.8	1,080	10,700	26,500	8030.00	1.20	154	262
DOHC	31-Jan-19	4.4	776	4.7				2,760	1	0	44	2	0.5	4,270	1210.0	0.2	2,060	410	1,740	461.00	1.12	87	57
No. of samples		12.0	12.0	3.0	8.0	9.0	9.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum		4.2	657.0	4.1	24.0	0.0	0.0	324.0	1.2	0.1	43.8	2.3	0.2	2960.0	240.0	0.2	924.0	410.0	1740.0	461.0	0.8	76.2	57.1
Maximum		4.7	2103.0	4.7	360.0	0.0	0.0	2760.0	1.2	194.0	216.0	5.7	1.4	14900.0	2740.0	1.0	5040.0	10700.0	26500.0	8030.0	22.8	224.0	311.0
Mean		4.3	1422.6	4.3	126.5	0.0	0.0	1116.4	1.2	110.7	127.2	3.8	0.8	8166.7	1046.6	0.6	2387.0	5169.7	12895.0	4024.4	3.8	147.8	181.6
Standard Deviation		0.1	496.2	0.3	102.0	0.0	0.0	705.6		68.0	67.3	1.2	0.4	3801.4	766.1	0.3	1580.8	3626.5	8818.0	2687.9	6.8	53.4	88.2
80th Percentile		4.4	1923.8	4.5	144.8	0.0	0.0	1432.0	1.2	190.4	207.2	5.1	1.2	10282.0	1416.0	0.8	3966.0	8430.0	21780.0	6508.0	2.9	190.6	258.0
Seepage from Dyson's WRD (Dry Season), near creek																							
DOHC	21-Dec-11	4.4	759		600	0	0	332	<5	40	50				854.0	0.3	3,980	1,350	4,860	1320.00	0.65	56	139
Seepage from Dyson's WRD (Wet Season), Seep 1 and upstream along the toe																							
DOHSE1	15-Apr-09	2.9	4851			0	0	3,430		115	497			154,000	49000.0	2.6	188	648	10,700	2100.00	<0.1	1,980	265
DOHSE1	28-Mar-12	2.9	2767		900	0	0																
DOHSE1	17-Feb-17			2.8				3,650	2	142	528	3	0	141,000	123000.0	2.8	289	700	11,100	2070.00	0.30	1,740	227
DOHSE1	15-Mar-17	2.6	3794	2.8	1278			2,170	2	93	334	3	1	79,800	35300.0	1.6	147	412	6,460	1200.00	0.40	1,210	160
DOHSE1	27-Apr-17	2.4	3916	2.8	762			2,510	2	105	385	3	1	98,000	33000.0	1.8	148	447	7,310	1350.00	0.30	1,310	164
DOHSE1	15-Feb-18	2.5	5631	2.7	1494			3,340	2	164	433	2	<1	147,000	127000.0	2.5	249	622	7,900	1890.00	0.28	1,710	207
DOHSE1	28-Feb-18	2.8	2911	2.8	952			2,520	2	119	392	3	0	89,900	33700.0	1.8	158	412	7,000	1230.00	0.20	1,280	148
DOHSE1	14-Mar-18	2.9	3363	2.9	431			2,260	2	109	381	4	2	75,200	10900.0	1.8	107	367	6,910	1120.00	0.15	1,130	148
DOHSE1	24-Apr-18	3.0	3357	3.0	608			2,470	2	147	413	3	<0.1	73,500	17600.0	1.8	83	411	8,340	1330.00	9.55	815	179
No. of samples		8.0	8.0	7.0	7.0	2.0	2.0	8.0	7.0	8.0	8.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum		2.4	2767.0	2.7	431.0	0.0	0.0	2170.0	1.6	92.7	334.0	2.3	0.4	73500.0	10900.0	1.6	82.5	367.0	6460.0	1120.0	0.2	815.0	148.0
Maximum		3.0	5630.5	3.0	1494.0	0.0	0.0	3650.0	1.9	164.0	528.0	3.5	1.6	154000.0	127000.0	2.8	289.0	700.0	11100.0	2100.0	9.6	1980.0	265.0
Mean		2.8	3823.5	2.8	917.9	0.0	0.0	2793.8	1.7	124.2	420.4	3.0	0.7	107300.0	53687.5	2.1	171.1	502.4	8215.0	1536.3	1.6	1396.9	187.3
Standard Deviation		0.2	979.1	0.1	369.8	0.0	0.0	581.9	0.1	24.3	64.1	0.5	0.5	34249.1	45512.3	0.5	69.2	131.3	1760.3	411.5	3.5	382.1	42.2
80th Percentile		2.9	4476.8	2.9	1212.8	0.0	0.0	3394.0	1.8	145.0	471.4	3.4	1.0	144600.0	93400.0	2.6	224.6	637.6	9756.0	1998.0	0.4	1728.0	219.0
DOHCus	6-Aug-10	3.7	4520	3.1		0	0	2,710	<5	95	511	8	4	87,600	5800.0		157	395	5,060	1240.00	<0.2	1,170	175

Red numbers indicate that the concentration was below the indicated detection limit

Table B-4. Seepage water quality data, Main WRD and Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
Seepage from the Main WRD (Dry Season), Seep 1 near the toe channel																							
MOHSE1	6-Aug-10	3.7	6000	3.1		0	0	5,190	<5	318	1,120	8	4	12,900	4800.0	22.2	4,400	5,180	11,100	3840.00	28.70	568	7,140
Seepage from the Main WRD (Wet Season), Seep 1 near the toe channel																							
MOHSE1	14-Apr-09	3.7	6580			0	0	4,710	<5	427	895			10,900	2600.0	28.6	3,890	4,370	5,860	3750.00	36.20	547	8,050
MOHSE1	28-Mar-12	4.1	4528		160																		
MOHSE1	26-Apr-12	3.8	4579		245	0	0	3,830	<5	323	748	3	3	8,870	3080.0	25.6	3,650	3,510	5,670	2950.00	91.60	473	6,400
MOHSE1	21-May-12	3.3	2213	3.3	172	0	0	4,050	<5	318	796	4	2	9,110	3540.0	21.0	3,880	3,740	6,530	3170.00	188.00	466	6,480
MOHSE1	1-Apr-16	4.0	2924					1,850		182	2,240	2	2	3,420	320.0	182.0	1,690	1,470	357	1270.00	9.96	197	2,910
MOHSE1	17-Feb-17			4.0				1,910	1	191	2,520	2	2	7,200	740.0	191.0	3,060	1,920	349	1830.00	25.70	254	3,190
MOHSE1	15-Mar-17	3.7	3425	3.9	154			2,250	2	214	3,040	2	2	8,620	780.0	214.0	3,240	2,160	411	2040.00	22.40	330	4,070
MOHSE1	24-Apr-17	4.9	3360	5.3	39			2,230	1	332	1,110	2	2	1,290	<20	332.0	2,230	935	356	870.00	9.10	135	1,760

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MOHSE1	31-May-17	4.3	4154	4.5				3,150	2	405	1,730	2	3	1,830	40.0	405.0	2,440	1,130	549	1050.00	13.20	164	2,230
MOHSE1	7-Jun-17	3.6	6516	3.5				4,030	<2	335	7,110	4	3	10,800	2280.0	335.0	4,010	3,610	800	3030.00	62.90	509	6,470
MOHSE1	5-Jul-17	3.4	6204	3.4	120			4,090	2	296	8,910	5	4	11,300	3760.0	296.0	3,570	4,120	833	3220.00	63.00	495	6,360
MOHSE1	3-Aug-17	3.3	5678	3.4	134			4,300	2	296	9,990	6	3	10,100	2080.0	296.0	3,880	4,140	882	3280.00	55.50	505	6,180
MOHSE1	16-Aug-17	3.2	6138	3.3	148			4,420	3	304	9,280	6	4	10,000	1840.0	304.0	4,300	3,870	910	3070.00	73.60	479	6,310
MOHSE1	28-Aug-17	3.4	5619	3.5	40			4,580	3	318	10,500	7	4	11,100	3280.0	318.0	5,190	4,180	970	3220.00	154.00	599	6,490
MOHSE1	28-Sep-17	4.0	10496	3.3	170			7,020	7	453	15,900	11	7	4,100	8960.0	453.0	1,820	3,020	1,470	2020.00	606.00	318	2,880
MOHSE1	17-Jan-18	3.7	3687	3.8	168			2,080	2	185	2,760	3	3	3,640	634.0	185.0	2,120	1,540	404	1280.00	14.00	213	2,890
MOHSE1	14-Feb-18	4.1	2386	4.1	73			1,760	2	181	2,330	2	1	6,160	632.0	181.0	2,640	1,800	325	1660.00	12.70	261	4,020
MOHSE1	27-Feb-18	3.8	2522		134			2,920	2	299	3,310	2	3	7,500	640.0	299.0	3,450	2,370	545	2190.00	20.30	430	4,850
MOHSE1	24-Apr-18	4.1	4636	3.6	176			3,580	3	296	6,480	4	3	7,840	1710.0	296.0	3,390	3,160	727	2650.00	26.90	398	5,280
No. of samples		19.0	19.0	16.0	18.0	3.0	3.0	18.0	18.0	18.0	18.0	17.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Minimum		3.2	2213.0	3.3	39.2	0.0	0.0	1760.0	1.3	181.0	748.0	1.8	1.2	1290.0	40.0	21.0	1690.0	935.0	325.0	870.0	9.1	135.0	1760.0
Maximum		4.9	10496.0	5.3	245.0	0.0	0.0	7020.0	6.9	453.0	15900.0	11.3	6.8	11300.0	8960.0	453.0	5190.0	4370.0	6530.0	3750.0	606.0	599.0	8050.0
Mean		3.8	4758.0	3.8	138.1	0.0	0.0	3486.7	2.3	297.5	4980.5	4.1	3.0	7432.2	2171.5	242.3	3247.2	2835.8	1552.7	2363.9	82.5	376.3	4823.3
Standard Deviation		0.4	2039.7	0.6	56.0	0.0	0.0	1360.8	1.5	82.1	4374.0	2.5	1.2	3292.8	2122.7	124.8	934.0	1169.3	2082.4	894.7	139.9	144.3	1861.7
80th Percentile		4.1	6177.6	4.0	170.8	0.0	0.0	4372.0	2.7	333.8	9132.0	5.9	3.5	10520.0	3240.0	326.4	3886.0	4020.0	1270.0	3200.0	84.4	501.0	6442.0
dsMOHSE	14-Apr-09	3.5	7980			0	0	5,100	<5	357	947			14,600	8000.0	32.2	5,680	5,260	8,080	4490.00	29.30	756	9,390
MOHwD	28-Mar-12	4.5	2694		103																		
Seepage from the Intermediate WRD (Dry Season), pool in the EFDC																							
IOHSE4	6-Aug-10	3.3	12600	2.7		0	0	13,800	<5	362	2,760	9	4	199,000	349000.0	211.0	34,900	74,700	84,300	64900.00	26.80	1,840	156,000
Seepage from the Intermediate WRD (Wet Season), pool in the EFDC																							
IOHSE1	28-Mar-12	3.8	4192		475																		
IOHSE2	28-Mar-12	3.5	660		820																		
IOHSE2	17-Feb-17			7.2		49		2,150	2	301	371	2	0	151	360.0	6.2	464	2,700	930	2450.00	<0.1	51	2,910
IOHSE2	15-Mar-17	3.7	5014	3.7	874			3,860	3	273	664	3	1	35,800	131000.0	41.8	7,770	18,600	28,700	15400.00	15.70	371	31,400
IOHSE2	7-Apr-17	3.6	5207	5.2				2,940	1	323	531	3	<1	4,080	2420.0	22.4	3,880	10,400	9,450	10300.00	0.50	82	14,800
IOHSE2	15-Feb-18	6.4	4200	7.0		48		2,490	2	369	420	2	0	92	30.0	6.3	155	2,860	387	2600.00	0.08	48	2,410
IOHSE2	28-Feb-18	4.4	4766	4.2	348			4,940	3	407	936	3	2	15,900	71700.0	31.2	3,690	17,900	19,000	13300.00	7.11	257	23,900
IOHSE2	24-Apr-18	3.4	6218	3.3	1280			5,750	5	370	1,010	3	2	67,300	189000.0	72.0	18,500	29,100	44,700	24800.00	19.10	661	50,400
IOHSE3	28-Mar-12	3.7	639		840																		
No. of samples		8.0	8.0	6.0	6.0	2.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum		3.4	639.0	3.3	348.0	47.6	0.0	2150.0	1.1	273.0	371.0	1.7	0.3	92.4	30.0	6.2	155.0	2700.0	387.0	2450.0	0.1	47.6	2410.0
Maximum		6.4	6218.0	7.2	1280.0	49.0	0.0	5750.0	4.9	407.0	1010.0	3.0	2.0	67300.0	189000.0	72.0	18500.0	29100.0	44700.0	24800.0	19.1	661.0	50400.0
Mean		4.0	3862.0	5.1	772.8	48.3		3688.3	2.5	340.5	655.3	2.5	1.2	20553.9	65751.7	30.0	5743.2	13593.3	17194.5	11475.0	8.5	245.0	20970.0
Standard Deviation		1.0	2082.8	1.7	329.7	1.0		1428.9	1.4	50.1	267.0	0.6	0.9	26629.5	80111.4	24.9	6835.6	10277.5	17315.8	8460.4	8.7	241.8	18396.7
80th Percentile		4.2	5129.9	7.0	874.0	48.7		4940.0	3.2	370.0	936.0	2.9	2.0	35800.0	131000.0	41.8	7770.0	18600.0	28700.0	15400.0	16.4	371.0	31400.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-5. Groundwater Quality Data for Bores MB10-1a and MB10-1b, Dyson's Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-1a (Dry Season)																							
MB10-1a	30-Nov-10	6.2	3223																				
MB10-1a	23-Aug-11	5.8	8570		598																		
MB10-1a (Wet Season)																							

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-1a	29-Mar-11	5.1	841	6.1		0	0	1,150	<5	134	216	5	1	161	1000.0	0.4	78	1,290	5,670	1290.00	2.10	48	71
MB10-1a	16-Feb-12	6.3	4404			246	300	2,600	<5	346	467	32	2	193	7350.0	<0.4	6	304	24,400	195.00	0.54	33	58
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		5.1	841.0	6.1	0.0	0.0	0.0	1150.0	0.0	134.0	216.0	4.9	0.6	161.0	1000.0	0.4	5.6	304.0	5670.0	195.0	0.5	33.1	58.3
Maximum		6.3	4404.0	6.1	0.0	246.0	300.1	2600.0	0.0	346.0	467.0	31.5	1.9	193.0	7350.0	0.4	78.4	1290.0	24400.0	1290.0	2.1	47.5	71.0
Mean		5.7	2622.5	6.1		123.0	150.1	1875.0		240.0	341.5	18.2	1.3	177.0	4175.0	0.4	42.0	797.0	15035.0	742.5	1.3	40.3	64.7
Standard Deviation		0.9	2519.4			173.9	212.2	1025.3		149.9	177.5	18.8	0.9	22.6	4490.1		51.5	697.2	13244.1	774.3	1.1	10.2	9.0
80th Percentile		6.0	3691.4	6.1		196.8	240.1	2310.0		303.6	416.8	26.2	1.6	186.6	6080.0	0.4	63.8	1092.8	20654.0	1071.0	1.8	44.6	68.5
MB10-1b (Dry Season)																							
MB10-1b	29-Nov-10	3.5	4066			0	0	2,720	5	249	442	11	2	18,300	400.0	2.2	31,700	24,700	48,000	19800.00	7.40	1,800	1,000
MB10-1b	23-Aug-11	3.9	4975		394																		
MB10-1b	25-Sep-12	4.8	4103		186																		
No. of samples		3.0	3.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum		3.5	4066.0	0.0	186.0	0.0	0.0	2720.0	5.0	249.0	442.0	11.0	1.9	18300.0	400.0	2.2	31700.0	24700.0	48000.0	19800.0	7.4	1800.0	1000.0
Maximum		4.8	4975.0	0.0	394.0	0.0	0.0	2720.0	5.0	249.0	442.0	11.0	1.9	18300.0	400.0	2.2	31700.0	24700.0	48000.0	19800.0	7.4	1800.0	1000.0
Mean		4.1	4381.3		290.0	0.0	0.0	2720.0	5.0	249.0	442.0	11.0	1.9	18300.0	400.0	2.2	31700.0	24700.0	48000.0	19800.0	7.4	1800.0	1000.0
Standard Deviation		0.7	514.5		147.1																		
80th Percentile		4.4	4626.2		352.4	0.0	0.0	2720.0	5.0	249.0	442.0	11.0	1.9	18300.0	400.0	2.2	31700.0	24700.0	48000.0	19800.0	7.4	1800.0	1000.0
MB10-1b (Wet Season)																							
MB10-1b	30-Mar-11	5.1	782	6.0		0	0	343	<5	49	56	5	0	128	<200	<0.2	469	312	642	256.00	2.30	26	32
MB10-1b	1-Mar-12	4.5	1318		36	0	0	618	<5	85	98	8	0	808	48.0	<0.2	1,730	803	1,680	695.00	1.66	116	47
No. of samples		2.0	2.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		4.5	782.0	6.0	35.8	0.0	0.0	343.0	0.0	48.7	56.2	5.4	0.3	128.0	48.0	0.0	469.0	312.0	642.0	256.0	1.7	25.5	32.0
Maximum		5.1	1318.0	6.0	35.8	0.0	0.0	618.0	0.0	84.7	97.7	8.0	0.4	808.0	48.0	0.0	1730.0	803.0	1680.0	695.0	2.3	116.0	47.1
Mean		4.8	1050.0	6.0	35.8	0.0	0.0	480.5		66.7	77.0	6.7	0.4	468.0	48.0		1099.5	557.5	1161.0	475.5	2.0	70.8	39.6
Standard Deviation		0.5	379.0			0.0	0.0	194.5		25.5	29.3	1.8	0.1	480.8			891.7	347.2	734.0	310.4	0.5	64.0	10.7
80th Percentile		5.0	1210.8	6.0	35.8	0.0	0.0	563.0		77.5	89.4	7.5	0.4	672.0	48.0		1477.8	704.8	1472.4	607.2	2.2	97.9	44.1

Red numbers indicate that the concentration was below the indicated detection limit

Table B-6. Groundwater Quality Data for Bores MB10-2, RN023413, and RN023419, Dyson's Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
DO20	7-Sep-11	5.2	8,720			155	189	6,580	60	450	1,230	88	8	22	435000.0	0.4	<0.1	4,550	56,500	1460.00	<0.1	6	124
DO21	7-Sep-11	4.7	5,510			50	61	3,850	15	302	679	7	6	2,130	145000.0	9.0	3,660	11,400	67,100	8140.00	1.90	622	1,550
MB10-2 (Dry Season)																							
MB10-2	1-Sep-11	7.0	1980			107	131	711	5	132	89	94	5	12	24.0	<0.2	28	5	287	5.19	0.13	31	<1
MB10-2	29-Nov-10	6.8	2350			0	0	1,110	10	186	134	126	9	73	<200	0.2	178	1,130	2,760	927.00	4.00	158	50
MB10-2	24-Sep-12	6.9	2100			212	259	815	5	167	111			15	1100.0	<0.1	2	4	449	3.12	0.28	15	4
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.8	1980.0	0.0	0.0	0.0	0.0	711.0	5.0	132.0	89.1	93.9	5.2	12.2	24.0	0.2	1.8	4.2	287.0	3.1	0.1	15.0	4.0
Maximum		7.0	2350.0	0.0	0.0	212.0	258.6	1110.0	10.0	186.0	134.0	126.0	8.8	73.0	1100.0	0.2	178.0	1130.0	2760.0	927.0	4.0	158.0	50.0
Mean		6.9	2143.3			106.3	129.7	878.7	6.7	161.7	111.4	110.0	7.0	33.3	562.0	0.2	69.2	379.8	1165.3	311.8	1.5	68.1	27.0
Standard Deviation		0.1	188.8			106.0	129.3	207.0	2.9	27.4	22.5	22.7	2.5	34.4	760.8		95.1	649.7	1383.4	532.8	2.2	78.3	32.5
80th Percentile		7.0	2250.0			170.0	207.4	992.0	8.0	178.4	124.8	119.6	8.1	49.7	884.8	0.2	117.9	680.1	1835.6	558.3	2.5	107.3	40.8

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-2 (Wet Season)																							
MB10-2	29-Mar-11	6.8	2192	7.9		0	0	932	5	180	119	105	7	18	600.0	<0.2	2	14	542	10.30	3.60	51	11
MB10-2	16-Feb-12	6.9	2537			216	264	988	5	205	130	83	5	14	1440.0	<0.2	0	6	659	3.89	0.45	15	10
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.8	2192.0	7.9	0.0	0.0	0.0	932.0	5.0	180.0	119.0	82.7	4.8	14.4	600.0	0.0	0.3	6.3	542.0	3.9	0.5	14.5	10.2
Maximum		6.9	2537.0	7.9	0.0	216.0	263.5	988.0	5.0	205.0	130.0	105.0	6.5	18.0	1440.0	0.0	1.6	14.3	659.0	10.3	3.6	50.6	11.0
Mean		6.9	2364.5	7.9		108.0	131.8	960.0	5.0	192.5	124.5	93.9	5.7	16.2	1020.0		1.0	10.3	600.5	7.1	2.0	32.6	10.6
Standard Deviation		0.0	244.0			152.7	186.3	39.6	0.0	17.7	7.8	15.8	1.2	2.5	594.0		0.9	5.6	82.7	4.5	2.2	25.5	0.6
80th Percentile		6.9	2468.0	7.9		172.8	210.8	976.8	5.0	200.0	127.8	100.5	6.2	17.3	1272.0		1.3	12.7	635.6	9.0	3.0	43.4	10.8
RN023413 (Dry Season)																							
RN023413	6-Oct-11	3.5	2389					2,730	<5	178	439	4	1	54,000	133000.0	0.5	679	442	8,450	1340.00	65.20	202	201
RN023413 (Wet Season)																							
RN023413	7-Apr-09		5310	3.1		580	708	3,780		199	564			123,000	126000.0		182	667	12,100	2040.00		340	320
RN023419 (Wet Season)																							
RN023419	9-Apr-09		9,860	2.8		2400	2,928	8,660		299	976			666,000	29600.0		2,610	2,830	29,700	7360.00		4,540	815
RN023419	21-Feb-12	2.8	7,490				2,580	6,450	<5	276	801	6	<10	459,000	9080.0	5.4	2,530	1,990	20,600	4830.00	27.40	3,300	556
No. of samples		1.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Minimum		2.8	7490.0	2.8	0.0	2400.0	2580.0	6450.0	0.0	276.0	801.0	6.0	0.0	459000.0	9080.0	5.4	2530.0	1990.0	20600.0	4830.0	27.4	3300.0	556.0
Maximum		2.8	9860.0	2.8	0.0	2400.0	2928.0	8660.0	0.0	299.0	976.0	6.0	0.0	666000.0	29600.0	5.4	2610.0	2830.0	29700.0	7360.0	27.4	4540.0	815.0
Mean		2.8	8675.0	2.8		2400.0	2754.0	7555.0		287.5	888.5	6.0		562500.0	19340.0	5.4	2570.0	2410.0	25150.0	6095.0	27.4	3920.0	685.5
Standard Deviation			1675.8				246.1	1562.7		16.3	123.7			146371.1	14509.8		56.6	594.0	6434.7	1789.0		876.8	183.1
80th Percentile		2.8	9386.0	2.8		2400.0	2858.4	8218.0		294.4	941.0	6.0		624600.0	25496.0	5.4	2594.0	2662.0	27880.0	6854.0	27.4	4292.0	763.2

Red numbers indicate that the concentration was below the indicated detection limit

Table B-7. Groundwater Quality Data for Bore RN023790, Dyson's Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN023790 (Dry Season)																							
RN023790	11-Jun-08	7.1	996	7.4			227	303	4	86	80	5	1	1	<20	<0.02	0	0.3	0.5	0.31	0.10	3	1
RN023790	16-Jul-08	7.3	960	7.3			229	287	4	84	79	4	1	1	<20	<0.02	0	1	1	0.60	0.10	3	1
RN023790	22-Oct-08	7.2	983	7.7			231	272	3	77	71	4	1	31	<20	0.0	2	11	386	8.54	0.89	107	57
RN023790	28-Oct-08	7.0	875				18	274	<5	72	73	4	1	8	<200	<0.2	3	2	17	8.00	0.20	3	<5
RN023790	4-Dec-08	8.2	1007	7.9			210	277	3	28	75	4	1	3	<200	<0.2	<0.1	1	4	0.82	0.57	3	2
RN023790	8-Jan-09	7.1	1001	7.9			211	283	3	79	76	4	1	1	<20	<0.02	0	0.3	2	1.15	0.04	3	1
RN023790	13-Oct-09	7.0	1044	6.9			194	273	4	74	72	4	1	5	<200	<0.2	1	0.5	3	0.51	0.27	23	2
RN023790	18-Nov-09	6.9	906	7.5			206	294	3	79	72	4	1	5	<20	<0.02	0	1	10	0.38	0.02	17	1
RN023790	1-Sep-11	7.2	1011			176	215	282	<5	78	73	3	1	5	<20	<0.2	14	<0.1	1	<0.1	<0.1	3	<1
RN023790	21-Sep-10	7.0	996			190	232	271	<5	77	73	4	1	2	<200	<0.2	0		1	0.30	<0.1	2	10
RN023790	25-Sep-12	7.1	1058			198	242	264	<5	76	70	4	1	23	2.0	<0.02	25	41	98	33.70	0.08	21	2
RN023790	16-Jul-09	7.4	982	7.5			212	280	3	74	68	4	1	3	<200	<0.2	1	1	13	0.48	0.59	17	2
RN023790	1-Sep-09	7.3	981	7.3			213	280	3	82	78	4	1	5	<200	<0.2	1	0.4	2	0.33	0.25	18	<1
No. of samples		13.0	13.0	9.0	0.0	3.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	12.0	13.0	13.0	13.0	13.0	13.0
Minimum		6.9	875.0	6.9	0.0	176.0	18.3	264.0	2.6	28.4	68.0	3.3	0.5	0.5	2.0	0.0	0.1	0.3	0.5	0.3	0.0	2.3	0.7
Maximum		8.2	1058.0	7.9	0.0	198.0	241.6	303.0	3.6	86.0	80.3	4.8	1.2	31.0	2.0	0.0	25.0	41.4	386.0	33.7	0.9	107.0	57.4
Mean		7.2	984.7	7.5		188.1	203.0	280.0	3.3	74.3	73.7	4.0	0.9	7.0	2.0	0.0	3.8	5.3	41.4	4.6	0.3	17.1	7.9

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Standard Deviation		0.3	49.5	0.3		11.2	57.0	10.3	0.3	14.3	3.5	0.4	0.2	9.3			7.7	12.4	106.8	9.6	0.3	28.2	17.6
80th Percentile		7.3	1009.4	7.8		195.0	230.2	285.4	3.5	80.6	76.9	4.2	1.1	7.0	2.0	0.0	2.5	2.3	15.3	6.6	0.6	19.9	3.8
RN023790 (Wet Season)																							
RN023790	17-Mar-09	7.0	940	7.3			196	296	3	79	72	4	1	2	<20	<0.02	1	0.3	1	0.53	0.13	3	1
RN023790	9-Apr-09	7.1	1097				1585	287	<5	77	69			16	<200	<0.2	5	0.3	1	0.20	<0.1	3	<5
RN023790	27-Apr-09	7.0	995	7.3			210	294	3	78	73	4	1	1	<20	<0.02	1	0.4	2	0.19	0.07	3	1
RN023790	12-Apr-11	7.1	1034	7.8		164	200	308	<5	82	51	4	1	117	<200	<0.2	6	1	4	3.00	0.90	4	17
RN023790	19-May-09	7.2	985	7.8			234	283	5	64	71	4	9	24	<200	<0.2	7	13	134	9.81	5.28	16	15
No. of samples		5.0	5.0	4.0	0.0	1.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.0	939.8	7.3	0.0	164.0	196.0	283.0	3.3	63.5	50.9	4.0	0.6	1.2	0.0	0.0	0.8	0.3	0.5	0.2	0.1	3.0	0.9
Maximum		7.2	1097.0	7.8	0.0	164.0	1584.7	308.0	4.8	81.9	72.9	4.1	8.9	117.0	0.0	0.0	6.8	13.3	134.0	9.8	5.3	16.0	17.0
Mean		7.1	1010.1	7.6		164.0	485.0	293.6	3.8	75.8	66.9	4.1	2.8	32.0			3.9	3.0	28.3	2.7	1.6	5.9	8.4
Standard Deviation		0.1	59.0	0.3			615.0	9.6	0.8	7.1	9.1	0.1	4.1	48.5			2.9	5.8	59.1	4.1	2.5	5.7	8.5
80th Percentile		7.1	1046.6	7.8		164.0	504.1	298.4	4.2	79.3	72.1	4.1	4.0	42.7			6.3	3.3	30.0	4.4	2.7	6.2	15.5

Red numbers indicate that the concentration was below the indicated detection limit

Table B-8. Groundwater Quality Data for Bore RN022036, West of Dyson's Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN022036 (Dry Season)																							
RN022036	22-Sep-10	6.6	416			172	209	3	<5	12	41	2	<0.1	2	<200	<0.2	1		7	0.90	<0.1	1	40
RN022036	26-Sep-12	6.5	454			212	259	3	<5	10	46	2	<0.1	5	6.0	<0.02	9	1	10	4.33	0.06	2	3
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	415.9	0.0	0.0	171.8	209.4	3.1	0.0	9.6	40.8	2.2	0.0	2.0	6.0	0.0	0.9	0.7	6.8	0.9	0.1	0.9	3.3
Maximum		6.6	454.4	0.0	0.0	212.0	258.6	3.4	0.0	12.1	45.8	2.2	0.0	5.4	6.0	0.0	9.4	0.7	9.6	4.3	0.1	1.7	40.0
Mean		6.5	435.2			191.9	234.0	3.3		10.9	43.3	2.2		3.7	6.0		5.1	0.7	8.2	2.6	0.1	1.3	21.7
Standard Deviation		0.1	27.2			28.4	34.8	0.2		1.8	3.5	0.0		2.4			6.0		2.0	2.4		0.6	26.0
80th Percentile		6.5	446.7			204.0	248.8	3.3		11.6	44.8	2.2		4.7	6.0		7.7	0.7	9.1	3.6	0.1	1.6	32.7
RN022036 (Wet Season)																							
RN022036	21-Feb-12	6.4	467			199	243	4	<5	11	47	2	<0.1	21	2.0	<0.02	0	0.1	7	0.98	0.03	1	2
RN022036	18-Apr-11	6.6	453	7.5		189	231	1	<5	5	41	2	<0.1	22	400.0	<0.2	1	6	12	7.60	<0.1	0.2	3
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.4	453.0	7.5	0.0	189.0	230.6	1.1	0.0	4.7	41.0	1.8	0.0	20.6	2.0	0.0	0.3	0.1	6.8	1.0	0.0	0.2	1.6
Maximum		6.6	467.0	7.5	0.0	199.2	243.0	3.7	0.0	10.6	46.6	2.3	0.0	22.0	400.0	0.0	1.1	5.7	11.5	7.6	0.0	1.4	3.0
Mean		6.5	460.0	7.5		194.1	236.8	2.4		7.7	43.8	2.1		21.3	201.0		0.7	2.9	9.1	4.3	0.0	0.8	2.3
Standard Deviation		0.1	9.9			7.2	8.8	1.8		4.2	4.0	0.4		1.0	281.4		0.6	4.0	3.4	4.7		0.8	1.0
80th Percentile		6.6	464.2	7.5		197.2	240.5	3.2		9.4	45.5	2.2		21.7	320.4		0.9	4.6	10.6	6.3	0.0	1.1	2.7

Red numbers indicate that the concentration was below the indicated detection limit

Table B-9. Groundwater Quality Data for Bores RN023792 and RN023793, West of Dyson's Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN023792 (Dry Season)																							

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN023792	22-Sep-10	7.3	463			146	177	3	<5	25	40	2	<0.1	2	<200	<0.2	0		158	0.10	<0.1	2	5
RN023792	1-Sep-11	7.2	469			179	218	3	<5	25	38	2	<0.1	5	6.0	<0.02	11	0.3	145	0.20	0.03	3	<0.1
RN023792	25-Sep-12	7.3	470			200	244	3	<5	24	35	2	<0.1	9	34.0	<0.02	3	1	129	0.65	0.05	3	0.4
RN023792	29-Oct-08	7.0	454				180	5	<5	26	41	3	<0.1	7	60.0	<0.2	0	0.1	151	0.12	<0.1	2	0.2
No. of samples		4.0	4.0	0.0	0.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.0	454.0	0.0	0.0	145.6	177.0	2.7	0.0	23.7	35.2	2.0	0.0	2.0	6.0	0.0	0.1	0.1	129.0	0.1	0.0	1.7	0.2
Maximum		7.3	469.6	0.0	0.0	200.0	244.0	5.3	0.0	25.6	41.2	2.6	0.0	9.4	60.0	0.0	11.4	1.0	158.0	0.7	0.1	3.2	5.0
Mean		7.2	463.9			174.9	204.8	3.6		24.7	38.5	2.3		5.9	33.3		3.6	0.5	145.8	0.3	0.0	2.5	1.9
Standard Deviation		0.2	7.2			27.4	32.2	1.2		0.8	2.7	0.3		3.1	27.0		5.3	0.5	12.4	0.3	0.0	0.7	2.7
80th Percentile		7.3	469.1			191.6	228.6	4.1		25.2	40.5	2.5		8.0	49.6		6.3	0.7	153.8	0.4	0.0	3.1	3.2
RN023792 (Wet Season)																							
RN023792	17-Feb-12	7.2	450			196	239	3	<5	24	36	2	<0.1	21	6.0	0.0	1	0.2	127	0.47	0.10	5	2
RN023792	12-Apr-11	7.2	425	7.9		160	195	4	<5	21	35	2	<0.1	25	<200	<0.2	2	1	148	1.30	<0.1	1	1
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.2	425.2	7.9	0.0	160.0	195.2	3.1	0.0	21.3	34.9	2.2	0.0	21.2	6.0	0.0	1.2	0.2	127.0	0.5	0.1	1.3	1.0
Maximum		7.2	450.4	7.9	0.0	196.0	239.1	4.0	0.0	23.7	36.0	2.3	0.0	25.0	6.0	0.0	2.0	0.5	148.0	1.3	0.1	4.5	1.8
Mean		7.2	437.8	7.9		178.0	217.2	3.6		22.5	35.5	2.3		23.1	6.0	0.0	1.6	0.3	137.5	0.9	0.1	2.9	1.4
Standard Deviation		0.0	17.8			25.5	31.1	0.6		1.7	0.8	0.1		2.7			0.6	0.2	14.8	0.6		2.2	0.6
80th Percentile		7.2	445.4	7.9		188.8	230.3	3.8		23.2	35.8	2.3		24.2	6.0	0.0	1.8	0.4	143.8	1.1	0.1	3.9	1.6
RN023793 (Dry Season)																							
RN023793	22-Sep-10	5.9	1236					444	5	5	149	12	13	347	400.0	<0.2	4	4	4	5.50	0.90	0.4	15
RN023793	25-Sep-12	5.8	1203			162	198	424	5	5	134	13	16	49	600.0	<0.02	22	10	8	13.50	0.08	2	5
RN023793	1-Sep-11	5.9	1251			138	168	441	5	5	140	11	16	30	176.0	<0.2	201	10	10	11.10	<0.1	2	10
RN023793	29-Oct-08		1158	5.8		50	61	440	5	5	144	11	15	22	580.0	-	2	7	8	11.00	-	1	3
No. of samples		3.0	4.0	1.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.8	1158.0	5.8	0.0	50.0	61.0	424.0	5.0	4.6	134.0	11.0	12.5	22.0	176.0	0.0	1.9	3.6	4.3	5.5	0.1	0.4	3.4
Maximum		5.9	1251.0	5.8	0.0	162.0	197.6	444.0	5.0	4.7	149.0	12.5	16.2	347.0	600.0	0.0	201.0	10.3	9.9	13.5	0.9	1.6	15.0
Mean		5.9	1212.0	5.8		116.7	142.3	437.3	5.0	4.7	141.8	11.6	14.8	112.2	439.0		57.2	7.6	7.5	10.3	0.5	1.0	8.4
Standard Deviation		0.0	41.2			59.0	71.9	9.0	0.0	0.1	6.3	0.7	1.6	157.0	197.1		96.3	3.0	2.3	3.4	0.6	0.6	5.2
80th Percentile		5.9	1242.0	5.8		152.4	185.9	442.2	5.0	4.7	146.0	12.0	15.8	168.3	588.0		93.5	9.8	8.8	12.1	0.7	1.6	12.1
RN023793 (Wet Season)																							
RN023793	7-Apr-09	5.9	1245					446	5	5	142	11	15	14	400.0	<0.2	3	4	4	5.10	<0.1	0.3	<5
RN023793	18-Apr-11	5.9	1198	6.9		126	154	423	5	10	147	12	15	9	<200	<0.2	2	0.2	11	1.70	0.70	2	3
RN023793	21-Feb-12	5.8	1280			165	202	449	5	5	144	12	14	39	532.0	<0.2	0	6	7	7.64	<0.1	1	2
No. of samples		3.0	3.0	1.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		5.8	1198.0	6.9	0.0	126.0	153.7	423.0	5.0	4.8	142.0	11.0	13.6	9.0	400.0	0.0	0.3	0.2	3.7	1.7	0.7	0.3	1.9
Maximum		5.9	1280.0	6.9	0.0	165.4	201.8	449.0	5.0	9.8	147.0	12.3	15.0	39.4	532.0	0.0	2.9	5.7	11.4	7.6	0.7	2.0	3.0
Mean		5.9	1241.0	6.9		145.7	177.8	439.3	5.0	6.5	144.3	11.8	14.5	20.8	466.0		1.6	3.2	7.3	4.8	0.7	0.9	2.5
Standard Deviation		0.1	41.1			27.9	34.0	14.2	0.0	2.8	2.5	0.7	0.8	16.3	93.3		1.3	2.8	3.9	3.0		0.9	0.8
80th Percentile		5.9	1266.0	6.9		157.5	192.2	447.8	5.0	7.9	145.8	12.2	15.0	29.2	505.6		2.4	4.9	9.5	6.6	0.7	1.4	2.8

Red numbers indicate that the concentration was below the indicated detection limit

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)		Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic				300.0		1000		100				3000
ADWG 2015 Health					2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%			150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%			80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%			55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation			5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500		5000		10.0	400	1000		1000.00	100.00	200	20000

Table B-10. Groundwater Quality Data for Bore RN022544, Near the Main Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022544 (Dry Season)																							
RN022544	29-Oct-08		4502	7.0				3,170	20	384	626	24	4	17	680.0		1	31	8,860	8.20		308	9
RN022544	7-Sep-11	6.3	5560			218	266	3,630	20	452	703	20	1	7	2250.0	0.5	<0.1	493	10,300	133.00	0.38	409	9
RN022544	22-Sep-10	7.5	3624			309	375	3,880	20	472	768	23	2	22	2000.0	<0.2	1	145	10,100	30.20	0.20	325	10
No. of samples		2.0	3.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
Minimum		6.3	3624.0	7.0	0.0	218.0	266.0	3170.0	20.0	384.0	626.0	19.7	0.6	6.6	680.0	0.5	0.8	31.0	8860.0	8.2	0.2	308.0	8.8
Maximum		7.5	5560.0	7.0	0.0	309.3	374.9	3880.0	20.0	472.0	768.0	24.0	3.6	22.0	2250.0	0.5	1.3	493.0	10300.0	133.0	0.4	409.0	10.0
Mean		6.9	4562.0	7.0		263.7	320.4	3560.0	20.0	436.0	699.0	22.2	2.1	15.1	1643.3	0.5	1.1	223.0	9753.3	57.1	0.3	347.3	9.3
Standard Deviation		0.8	969.4			64.6	77.0	360.1	0.0	46.1	71.1	2.3	1.5	7.8	843.6		0.4	240.7	780.1	66.6	0.1	54.1	0.6
80th Percentile		7.3	5136.8	7.0		291.0	353.1	3780.0	20.0	464.0	742.0	23.6	3.0	19.8	2150.0	0.5	1.2	353.8	10220.0	91.9	0.3	375.4	9.7
RN022544 (Wet Season)																							
RN022544	28-Mar-11	6.5	3241	7.6				1,590	15	221	327	18	1	17	1800.0	<0.2	0	65	4,660	15.60	0.10	125	6
RN022544	8-Apr-09	6.4	6240				2682	4,180		498	794			18	1200.0	<0.2	1	644	11,900	227.00	<0.1	552	95
No. of samples		2.0	2.0	1.0	0.0	0.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.4	3241.0	7.6	0.0	0.0	2681.8	1590.0	15.0	221.0	327.0	17.7	1.3	17.0	1200.0	0.0	0.4	65.0	4660.0	15.6	0.1	125.0	6.0
Maximum		6.5	6240.0	7.6	0.0	0.0	2681.8	4180.0	15.0	498.0	794.0	17.7	1.3	18.0	1800.0	0.0	0.5	644.0	11900.0	227.0	0.1	552.0	95.0
Mean		6.4	4740.5	7.6			2681.8	2885.0	15.0	359.5	560.5	17.7	1.3	17.5	1500.0		0.5	354.5	8280.0	121.3	0.1	338.5	50.5
Standard Deviation		0.1	2120.6					1831.4		195.9	330.2			0.7	424.3		0.1	409.4	5119.5	149.5		301.9	62.9
80th Percentile		6.4	5640.2	7.6			2681.8	3662.0	15.0	442.6	700.6	17.7	1.3	17.8	1680.0		0.5	528.2	10452.0	184.7	0.1	466.6	77.2

Red numbers indicate that the concentration was below the indicated detection limit

Table B-11. Groundwater Quality Data for Bores RN022082S and RN022082D, Beneath the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022082S (Dry Season)																							
RN022082S	29-Oct-08	3.9	8,300					7,080	<5	439	1,570	1	3	7,520	20800.0	25.6	1,840	4,410	10,100	5230.00	5.90	334	9,090
RN022082S	25-Aug-11	4.2	8,250		164			6,040	<5	460	1,230	2	3	5,760	8820.0	32.8	1,950	3,390	7,240	4200.00	50.20	308	8,800
RN022082S	12-Oct-10	4.2	9,070					6,940	<5	446	1,540	3	4	6,120	35100.0	22.8	1,580	4,350	9,890	4570.00	2.10	281	10,100
No. of samples		3.0	3.0	0.0	1.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		3.9	8250.0	0.0	164.0	0.0	0.0	6040.0	0.0	439.0	1230.0	1.3	2.5	5760.0	8820.0	22.8	1580.0	3390.0	7240.0	4200.0	2.1	281.0	8800.0
Maximum		4.2	9070.0	0.0	164.0	0.0	0.0	7080.0	0.0	460.0	1570.0	2.9	3.7	7520.0	35100.0	32.8	1950.0	4410.0	10100.0	5230.0	50.2	334.0	10100.0
Mean		4.1	8540.0		164.0			6686.7		448.3	1446.7	2.1	3.2	6466.7	21573.3	27.1	1790.0	4050.0	9076.7	4666.7	19.4	307.7	9330.0
Standard Deviation		0.2	459.7					564.4		10.7	188.2	0.8	0.6	929.8	13157.1	5.2	190.0	572.4	1594.1	521.8	26.7	26.5	682.4
80th Percentile		4.2	8762.0		164.0			7024.0		454.4	1558.0	2.6	3.6	6960.0	29380.0	29.9	1906.0	4386.0	10016.0	4966.0	32.5	323.6	9696.0
RN022082S (Wet Season)																							
RN022082S	14-Apr-09	4.2	8,410	4				6,880		458	1,340			5,930	16400.0	30.2	1,560	4,220	9,150	5160.00	3.00	270	9,170
RN022082S	11-Feb-11	4.0	6,030					3,950		360	761	2	3	4,360	4200.0	33.6	1,390	2,620	5,140	3200.00	1.90	197	9,610
RN022082S	11-Feb-11	4.0	6,030					3,950		357	758	2	2	4,280	4400.0	33.4	1,380	2,600	4,950	3090.00	1.80	200	9,140
No. of samples		3.0	3.0	1.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Minimum		4.0	6030.0	4.2	0.0	0.0	0.0	3950.0	0.0	357.0	758.0	2.3	2.4	4280.0	4200.0	30.2	1380.0	2600.0	4950.0	3090.0	1.8	197.0	9140.0
Maximum		4.2	8410.0	4.2	0.0	0.0	0.0	6880.0	0.0	458.0	1340.0	2.4	2.8	5930.0	16400.0	33.6	1560.0	4220.0	9150.0	5160.0	3.0	270.0	9610.0
Mean		4.0	6823.3	4.2				4926.7		391.7	953.0	2.4	2.6	4856.7	8333.3	32.4	1443.3	3146.7	6413.3	3816.7	2.2	222.3	9306.7
Standard Deviation		0.1	1374.1					1691.6		57.5	335.2	0.1	0.3	930.4	6986.7	1.9	101.2	929.6	2371.9	1164.7	0.7	41.3	263.1
80th Percentile		4.1	7458.0	4.2				5708.0		418.8	1108.4	2.4	2.7	5302.0	11600.0	33.5	1492.0	3580.0	7546.0	4376.0	2.6	242.0	9434.0
RN022082D (Dry Season)																							
RN022082D	29-Oct-08	3.8	8,460					6,650	<5	426	1,450	5	3	7,790	14900.0	27.0	2,160	4,330	9,930	5260.00	5.20	347	9,280
RN022082D	12-Oct-10	4.2	8,970					6,790	<5	454	1,480	3	4	6,530	23200.0	20.4	1,530	3,990	9,350	4500.00	1.90	286	10,500
RN022082D	18-Oct-12	4.4	8,000		158			6,100	<5	462	1,240	2	3	4,810	9480.0	22.4	1,800	2,910	6,590	3700.00	30.50	312	6,160
RN022082D	25-Aug-11	4.3	8,320		152			6,080	<5	467	1,240	2	3	5,310	7400.0	32.4	1,900	3,310	7,050	4120.00	51.00	297	8,610
No. of samples		4.0	4.0	0.0	2.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		3.8	8000.0	0.0	152.0	0.0	0.0	6080.0	0.0	426.0	1240.0	2.1	2.7	4810.0	7400.0	20.4	1530.0	2910.0	6590.0	3700.0	1.9	286.0	6160.0
Maximum		4.4	8970.0	0.0	158.0	0.0	0.0	6790.0	0.0	467.0	1480.0	4.6	3.8	7790.0	23200.0	32.4	2160.0	4330.0	9930.0	5260.0	51.0	347.0	10500.0
Mean		4.2	8437.5		155.0			6405.0		452.3	1352.5	2.9	3.3	6110.0	13745.0	25.6	1847.5	3635.0	8230.0	4395.0	22.2	310.5	8637.5
Standard Deviation		0.3	403.8		4.2			368.3		18.3	130.5	1.1	0.5	1332.8	7051.7	5.3	260.4	643.0	1655.9	662.8	23.1	26.6	1827.6
80th Percentile		4.3	8664.0		156.8			6706.0		464.0	1462.0	3.5	3.6	7034.0	18220.0	29.2	2004.0	4126.0	9582.0	4804.0	38.7	326.0	9768.0
RN022082D (Wet Season)																							
RN022082D	14-Apr-09	4.2	8,720					7,170		464	1,410			5,700	20000.0	28.8	1,440	4,310	9,490	5160.00	2.20	270	9,080
RN022082D	11-Feb-11	4.0	10,150					7,640		471	1,630	6	3	4,710	16000.0	22.0	1,380	3,720	12,800	4080.00	2.50	271	6,610
RN022082D	13-Feb-12	4.3	5,300		88			3,530	<5	348	657	2	2	3,250	5860.0	21.2	1,050	1,550	3,270	1860.00	6.74	153	5,480
No. of samples		3.0	3.0	0.0	1.0	0.0	0.0	3.0	1.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		4.0	5300.0	0.0	88.0	0.0	0.0	3530.0	0.0	348.0	657.0	1.7	1.5	3250.0	5860.0	21.2	1050.0	1550.0	3270.0	1860.0	2.2	153.0	5480.0
Maximum		4.3	10150.0	0.0	88.0	0.0	0.0	7640.0	0.0	471.0	1630.0	6.1	3.0	5700.0	20000.0	28.8	1440.0	4310.0	12800.0	5160.0	6.7	271.0	9080.0
Mean		4.2	8056.7		88.0			6113.3		427.7	1232.3	3.9	2.3	4553.3	13953.3	24.0	1290.0	3193.3	8520.0	3700.0	3.8	231.3	7056.7
Standard Deviation		0.2	2492.1					2249.5		69.1	510.3	3.1	1.1	1232.5	7288.8	4.2	210.0	1453.4	4838.5	1682.5	2.5	67.8	1841.1
80th Percentile		4.3	9578.0		88.0			7452.0		468.2	1542.0	5.2	2.7	5304.0	18400.0	26.1	1416.0	4074.0	11476.0	4728.0	5.0	270.6	8092.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-12. Groundwater Quality Data for Bores RN022411 and RN029993, Near the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN022411 (Dry Season)																							
RN022411	6-Apr-09		5190	3.6		66	81	3,430		119	729			20,400	2800.0		4,190	4750	13,500	4151.00		1010	5250
RN022411	23-Feb-11	4.2	1532					698	<5	26	155	3	1	2,570	3600.0	3.6	311	863	2,880	775.00	4.70	132	994
No. of samples		2.0	2.0	1.0	0.0	1.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Minimum		4.2	1532.0	3.6	0.0	66.0	80.5	698.0	0.0	25.7	155.0	2.6	0.5	2570.0	2800.0	3.6	311.0	863.0	2880.0	775.0	4.7	132.0	994.0
Maximum		4.2	5190.0	3.6	0.0	66.0	80.5	3430.0	0.0	119.0	729.0	2.6	0.5	20400.0	3600.0	3.6	4190.0	4750.0	13500.0	4151.0	4.7	1010.0	5250.0
Mean		4.2	3361.0	3.6		66.0	80.5	2064.0		72.4	442.0	2.6	0.5	11485.0	3200.0	3.6	2250.5	2806.5	8190.0	2463.0	4.7	571.0	3122.0
Standard Deviation			2586.6					1931.8		66.0	405.9			12607.7	565.7		2742.9	2748.5	7509.5	2387.2		620.8	3009.4
80th Percentile		4.2	4458.4	3.6		66.0	80.5	2883.6		100.3	614.2	2.6	0.5	16834.0	3440.0	3.6	3414.2	3972.6	11376.0	3475.8	4.7	834.4	4398.8
RN022411 (Wet Season)																							
RN022411	6-Apr-09	3.6	5200					3,430		119	729			20,400	2800.0	18.2	4,190	4,750	13,500	4150.00	21.90	1,010	5,250
RN022417 (Wet Season)																							
RN022417	6-Apr-09		4825	3.6		185	226	3,230		278	534			47,300	1800.0	24.0	20,100	4310	5,510	4800.00	43.60	1420	6680
RN029993 (Dry Season)																							

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN029993	14-Oct-10	5.1	9950					7,690	<5	295	1,810	19	6	3,610	74900.0	14.2	2,800	4,040	19,500	2800.00	12.70	426	3,550
RN029993	12-Oct-12	6.1	16430			225	275	16,400	5	461	4,000	69	10	37	6230.0	1.6	48	444	39,300	311.00	0.63	20	231
RN029993	23-Aug-11	5.8	12320			60	73	10,700	<5	352	2,480	37	6	214	21400.0	5.8	320	1,280	22,900	924.00	70.40	74	796
RN029993	28-Sep-12	6.0	17900			112	137	16,300	<5	462	3,950	69	9	41	2220.0	0.9	10	228	39,400	153.00	2.82	14	141
No. of samples		4.0	4.0	0.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.1	9950.0	0.0	0.0	60.0	73.2	7690.0	5.0	295.0	1810.0	19.4	5.5	36.7	2220.0	0.9	9.8	228.0	19500.0	153.0	0.6	13.6	141.0
Maximum		6.1	17900.0	0.0	0.0	225.0	274.5	16400.0	5.0	462.0	4000.0	69.4	9.9	3610.0	74900.0	14.2	2800.0	4040.0	39400.0	2800.0	70.4	426.0	3550.0
Mean		5.7	14150.0			132.3	161.4	12772.5	5.0	392.5	3060.0	48.7	7.7	975.5	26187.5	5.6	794.4	1498.0	30275.0	1047.0	21.6	133.3	1179.5
Standard Deviation		0.4	3662.9			84.4	102.9	4310.0		83.0	1091.6	24.7	2.2	1758.3	33509.1	6.1	1344.2	1754.3	10570.5	1215.1	32.9	197.0	1606.7
80th Percentile		6.0	17018.0			179.8	219.4	16340.0	5.0	461.4	3970.0	69.0	9.5	1572.4	42800.0	9.2	1312.0	2384.0	39340.0	1674.4	35.8	214.7	1897.6
RN029993 (Wet Season)																							
RN029993	10-Feb-11	5.5	10230					8,240		266	1,940	34	5	1,020	34400.0	6.6	1,680	1,760	22,900	1240.00	5.30	161	1,560
RN029993	24-Feb-12	6.0	16520			60	73	17,000	<5	466	4,130	69	8	51	<80	<0.8	65	77	42,300	44.50	<0.4	176	47
No. of samples		2.0	2.0	0.0	0.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		5.5	10230.0	0.0	0.0	60.0	73.2	8240.0	0.0	266.0	1940.0	33.5	5.4	51.0	34400.0	6.6	64.5	76.6	22900.0	44.5	5.3	161.0	47.0
Maximum		6.0	16520.0	0.0	0.0	60.0	73.2	17000.0	0.0	466.0	4130.0	69.0	8.0	1020.0	34400.0	6.6	1680.0	1760.0	42300.0	1240.0	5.3	176.0	1560.0
Mean		5.8	13375.0			60.0	73.2	12620.0		366.0	3035.0	51.3	6.7	535.5	34400.0	6.6	872.3	918.3	32600.0	642.3	5.3	168.5	803.5
Standard Deviation		0.4	4447.7					6194.3		141.4	1548.6	25.1	1.8	685.2			1142.3	1190.3	13717.9	845.3		10.6	1069.9
80th Percentile		5.9	15262.0			60.0	73.2	15248.0		426.0	3692.0	61.9	7.5	826.2	34400.0	6.6	1356.9	1423.3	38420.0	1000.9	5.3	173.0	1257.4
RN029997 (Dry Season)																							
RN029997	12-Oct-10	5.2	10440					8,880	<5	197	2,160	28	7	265	<400	8.0	659	414	10,900	795.00	4.90	268	980
RN029999 (Dry Season)																							
RN029999	13-Oct-10	3.8	2865					1,660	<5	198	282	8	2	7,810		8.8	4,570	1,270	3,050	1060.00	14.20	515	2,800
RN030002 (Dry Season)																							
RN030002	13-Oct-10	3.8	8930					8,440	<5	401	1,980	19	5	9,860	6200.0	63.0	8,940	6,850	19,800	5890.00	51.40	1,820	15,700
RN030004 (Dry Season)																							
RN030004	11-Aug-10	7.2	1760			186	226	1,760	<5	122	450	9	6	19	<200	<0.2	2	258	6,390	110.00	0.30	97	48

Red numbers indicate that the concentration was below the indicated detection limit

Table B-13. Groundwater Quality Data for Bore RN022083, East of the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022083 (Dry Season)																							
RN022083	16-Jul-08	6.3	95	6.4		53	65	8,180	5	184	2,050	57	5	<1	260.0	0.2	<1	7	1,060	5.52	3.21	3	19
RN022083	22-Oct-08	6.3	8436	6.8		52	63	7,110	2	158	1,710	50	5	31	<400	<0.4	1	4	765	3.44	0.46	3	21
RN022083	28-Oct-08	6.0	1091			10	12	9,240	<5	235	2,470	64	8	9	<200	<0.2	2	13	2,420	8.30	<0.1	6	25
RN022083	6-Nov-08	6.2	9301	6.3		52	64	8,390	5	186	2,050	62	6	2	240.0	<0.2	2	5	795	5.17	4.59	3	15
RN022083	4-Dec-08	7.3	5843	7.1		46	56	6,810	4	154	1,600	49	5	8	480.0	<0.4	1	4	208	3.85	3.01	2	17
RN022083	16-Jul-09	6.5	7117	6.7		43	53	5,240	3	96	1,200	45	3	14	<800	<0.8	5	3	205	5.58	1.62	3	26
RN022083	1-Sep-09	6.3	6870	6.3		39	48	4,950	2	103	1,270	44	4	17	<800	<0.8	25	4	126	5.23	3.31	11	15
RN022083	13-Oct-09	5.9	6850	6.1		42	51	4,790	3	96	1,190	44	3	19	<200	<2	15	3	126	4.64	<1	14	14
RN022083	18-Nov-09	5.8	5770	6.6		39	48	6,560	3	134	1,510	47	5	11	<200	<0.2	16	2	95	4.51	0.80	7	18
RN022083	7-Apr-09		15160	6.2				13,700		281	3,100			9	600.0		73	30	3,190	16.00		10	65
RN022083	21-Sep-10	6.1	13160			75	92	12,400	<5	263	3,050	60	8	6	<400	0.8	4	21	2,720	12.00	<0.2	7	25
RN022083	6-Sep-11	6.1	16350			78	95	14,200	10	377	3,390	69	8	296	82.0	11.6	320	277	4,840	232.00	1.13	105	444
RN022083	30-Sep-13	6.1	12560			64	78	10,900	10	278	2,620	62	7	11	56.0	0.4	29	23	2,880	14.70	1.09	7	16

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN022083	20-Oct-14	6.0	9940			64	78	9,190	<5	212	2,290	55	6	21	<20	0.3	26	9	1,570	6.92	0.20	23	9
No. of samples		13.0	14.0	9.0	0.0	13.0	13.0	14.0	13.0	14.0	14.0	13.0	13.0	14.0	14.0	13.0	14.0	14.0	14.0	14.0	13.0	14.0	14.0
Minimum		5.8	95.0	6.1	0.0	10.0	12.2	4790.0	2.1	96.4	1190.0	44.1	3.0	2.1	56.0	0.2	0.9	2.2	94.8	3.4	0.2	2.2	8.5
Maximum		7.3	16350.0	7.1	0.0	78.0	95.2	14200.0	10.0	377.0	3390.0	69.2	8.4	296.0	600.0	11.6	320.0	277.0	4840.0	232.0	4.6	105.0	444.0
Mean		6.2	8467.4	6.5		50.6	61.8	8690.0	4.6	197.0	2107.1	54.5	5.6	35.0	286.3	2.7	39.8	28.8	1500.0	23.4	1.9	14.6	52.0
Standard Deviation		0.4	4757.4	0.3		17.7	21.6	3121.6	3.0	82.6	738.6	8.5	1.8	78.8	216.1	5.0	86.5	72.0	1482.8	60.2	1.5	26.6	113.6
80th Percentile		6.3	12800.0	6.7		63.9	78.0	11500.0	6.2	269.0	2792.0	62.1	7.5	20.4	480.0	3.0	27.3	21.6	2784.0	13.1	3.2	12.4	25.2
RN022083 (Wet Season)																							
RN022083	7-Apr-09	6.2	15160			475	579	13,700		281	3,100			9	600.0	1.2	73	30	3,190	16.40	<0.1	10	65
RN022083	29-Apr-09	6.0	11630	6.5		52	63	10,100	5	236	2,620	62	5	22	<200	<2	4	13	1,850	7.30	<1	5	31
RN022083	19-May-09	6.2	8750	6.5		41	50	5,660	3	111	1,400	53	2	50	260.0	0.5	111	84	746	70.00	2.40	16	153
RN022083	20-Jan-09	6.0	11850	6.4		44	54	6,230	2	139	1,560	49	2	10	220.0	0.3	2	9	1,900	8.64	1.22	6	31
RN022083	18-Mar-09	6.2	8207	6.4		54	66	12,200	5	249	3,070	68	6	6	<400	<0.4	6	7	1,130	7.41	2.90	5	27
RN022083	23-Feb-11	6.0	15830					13,600	10	308	3,370	68	8	12	<800	<0.8	1	31	3,730	16.90	<0.4	9	16
RN022083	27-Feb-13	6.1	15560			88	107	14,200	5	317	3,530	66	7	136	28.0	0.6	1,730	32	3,150	24.00	0.48	9	27
RN022083	27-Feb-14	6.1	14830			142	173	13,100	<5	320	3,300	69	9	33	<40	<0.4	501	19	3,330	10.70	0.24	6	22
No. of samples		8.0	8.0	4.0	0.0	7.0	7.0	8.0	7.0	8.0	8.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum		6.0	8207.0	6.4	0.0	41.0	50.0	5660.0	2.3	111.0	1400.0	49.2	2.0	5.9	28.0	0.3	1.2	7.1	746.0	7.3	0.2	4.9	16.0
Maximum		6.2	15830.0	6.5	0.0	474.6	579.0	14200.0	10.0	320.0	3530.0	69.0	8.5	136.0	600.0	1.2	1730.0	84.1	3730.0	70.0	2.9	15.9	153.0
Mean		6.1	12727.1	6.5		127.9	156.1	11098.8	4.9	245.1	2743.8	62.2	5.5	34.7	277.0	0.7	303.4	28.1	2378.3	20.2	1.4	8.2	46.5
Standard Deviation		0.1	3075.6	0.1		157.0	191.5	3425.5	2.8	80.5	826.0	8.0	2.7	43.5	238.0	0.4	600.6	24.7	1116.0	21.0	1.2	3.6	45.4
80th Percentile		6.2	15400.0	6.5		131.2	160.1	13660.0	5.0	313.4	3342.0	68.0	7.9	43.0	396.0	0.9	345.0	31.8	3274.0	21.2	2.5	9.3	51.5
RN025168 (Wet Season)																							
RN025168	7-Apr-09	6.1	37				116	2		0	2			21	<200	<0.2	4	2	9	2.10	2.20	0	5

Red numbers indicate that the concentration was below the indicated detection limit

Table B-14. Groundwater Quality Data Near Bore RN022084 and Other Bores Near Eastern Toe of the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022084 (Dry Season)																							
RN022084	16-Jul-09	4.7	11840	4.7			<1	11,100	6	254	2,500	50	8	5,080	14000.0	56.6	8,330	8,350	41,000	7380.00	13.70	2,250	14,400
RN022084	13-Oct-09	4.9	12150	4.9			3	10,100	8	254	2,380	58	13	5,640	16500.0	55.4	6,090	9,200	43,000	8040.00	13.00	1,710	14,600
RN022084	28-Oct-08		10010	3.9				9,880	<5	200	2,270	34	6	15,700	3700.0		14,400	10,900	47,700	9020.00		3,910	19,100
RN022084	11-Jun-08	4.3	10300	4.1			<1	10,900	8	287	2,570	66	7	11,200	3880.0	56.0	11,500	9,080	44	8200.00	23.20	3,480	16,500
RN022084	16-Jul-08	4.3	11930	4.3				10,500	8	280	2,510	65	6	11,000	4840.0	58.2	-	9,170	47	8370.00	25.10	3,200	16,000
RN022084	22-Oct-08	4.5	12250	4.3				9,790	3	242	2,250	55	6	14,500	3540.0	63.2	13,100	9,950	44,900	8920.00	27.90	3,390	18,200
RN022084	28-Oct-08	3.9	10010					9,830	<5	205	2,410	34	6	16,000	4000.0	73.0	14,400	10,900	46,800	9650.00	36.00	3,890	18,800
RN022084	1-Sep-09	4.9	11740	4.8			<1	10,200	6	269	2,550	49	11	5,170	17000.0	56.6	7,730	9,090	42,300	7640.00	11.80	2,090	14,000
RN022084	4-Dec-08	5.1	11600	4.2				9,650	4	210	2,140	33	6	14,800	5640.0	67.0	13,800	10,500	44,100	9440.00	32.40	3,960	16,600
RN022084	6-Sep-11	4.3	11360					9,380	5	224	2,190	35	4	12,700	3030.0	55.8	13,200	9,560	45,200	8380.00	32.60	2,900	16,100
RN022084	18-Oct-12	4.2	10680		280			9,770	<5	231	2,260	37	6	12,500	3350.0	59.4	12,100	9,020	38,000	7980.00	66.10	3,110	15,300
RN022084	18-Nov-09	4.9	10570	4.9			<1	10,600	9	300	2,440	77	11	4,980	17400.0	46.8	1,290	7,620	43,200	6730.00	12.30	1,510	12,300
RN022084	11-Aug-10	3.9	11020					9,290	<5	207	2,330	30	6	14,100	3200.0	67.4	12,800	10,600	43,500	8860.00	35.40	3,780	18,600
RN022084	1-Oct-13	6.0	13320			83	101	9,840	20	413	2,180	133	5	215	2350.0	6.9	627	1,300	32,400	1110.00	1.44	376	1,880
RN022084	20-Oct-14	5.0	9560			9	11	8,680	<5	235	2,080	50	5	8,570	2650.0	50.4	9,450	7,560	37,000	6830.00	20.60	2,360	12,900

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
No. of samples		14.0	15.0	9.0	1.0	2.0	7.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.0	15.0	15.0	15.0	15.0	14.0	15.0	15.0
Minimum		3.9	9560.0	3.9	280.0	9.4	3.0	8680.0	2.8	200.0	2080.0	29.9	3.7	215.0	2350.0	6.9	627.0	1300.0	44.4	1110.0	1.4	376.0	1880.0
Maximum		6.0	13320.0	4.9	280.0	82.8	101.0	11100.0	20.0	413.0	2570.0	133.0	12.6	16000.0	17400.0	73.0	14400.0	10900.0	47700.0	9650.0	66.1	3960.0	19100.0
Mean		4.6	11222.7	4.5	280.0	46.1	38.5	9967.3	7.7	254.1	2337.3	53.6	7.0	10143.7	7005.3	55.2	9915.5	8853.3	36612.8	7770.0	25.1	2794.4	15018.7
Standard Deviation		0.6	1033.1	0.4		51.9	54.3	631.5	4.8	54.0	156.5	26.2	2.4	4882.9	5852.9	15.5	4596.5	2340.6	15358.8	2034.0	15.7	1053.2	4199.6
80th Percentile		4.9	11974.0	4.8	280.0	68.1	65.2	10520.0	8.4	281.4	2502.0	64.9	8.1	14560.0	14500.0	64.7	13440.0	10520.0	44960.0	8940.0	33.7	3802.0	18280.0
RN022084 (Wet Season)																							
RN022084	8-Jan-09	6.8	11360	4.2				9,930	2	211	2,450	35	6	15,000	5860.0	67.2	13,100	10,000	42,600	8880.00	0.82	3,790	18,200
RN022084	18-Mar-09	4.3	11330	5.2			<1	11,300	10	348	2,640	103	5	6,950	400.0	42.2	7,830	6,060	37,400	5460.00	20.80	2,210	10,800
RN022084	7-Apr-09	3.8	12130					10,500	<5	222	2,300			18,400	7800.0	72.6	15,700	11,600	48,500	10500.00	43.70	4,020	19,900
RN022084	23-Apr-09	4.3	11880	4.1				9,570	6	255	2,420	44	7	10,300	2000.0	61.8	11,700	9,940	45,700	8920.00	23.80	3,330	16,600
RN022084	19-May-09	4.6	11550	4.6			<1	10,400	3	242	2,440	38	6	11,900	21100.0	65.8	11,100	10,200	50,800	9260.00	24.70	3,300	17,400
RN022084	23-Feb-12	4.1	10590					9,000	<5	217	2,070	31	4	12,500	3220.0	54.4	12,100	8,980	42,100	7900.00	27.20	2,830	14,800
RN022084	14-Feb-11	3.7	11430					9,090		213	2,100	32	5	16,800	4400.0	65.2	15,400	11,500	45,400	8870.00	40.60	3,800	17,100
RN022084	15-Feb-13	4.1	10460					8,670	<5	208	2,050	33	4	14,000	3940.0	61.2	13,800	8,650	40,800	7700.00	32.20	3,110	16,400
RN022084	28-Feb-14	6.3	11390			74	90	10,100	5	466	2,360	154	6	46	1830.0	0.7	268	198	31,600	109.00	<0.2	423	184
No. of samples		9.0	9.0	4.0	0.0	1.0	3.0	9.0	8.0	9.0	9.0	8.0	8.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Minimum		3.7	10460.0	4.1	0.0	74.0	90.3	8670.0	2.4	208.0	2050.0	31.1	3.6	46.0	400.0	0.7	268.0	198.0	31600.0	109.0	0.8	423.0	184.0
Maximum		6.8	12130.0	5.2	0.0	74.0	90.3	11300.0	10.1	466.0	2640.0	154.0	6.7	18400.0	21100.0	72.6	15700.0	11600.0	50800.0	10500.0	43.7	4020.0	19900.0
Mean		4.7	11346.7	4.5		74.0	90.3	9840.0	5.3	264.7	2314.4	58.9	5.3	11766.2	5616.7	54.6	11222.0	8569.8	42766.7	7511.0	26.7	2979.2	14598.2
Standard Deviation		1.1	537.1	0.5				841.6	3.0	87.3	202.9	45.3	1.0	5568.4	6217.2	22.0	4745.9	3551.6	5817.9	3100.1	13.3	1107.1	5965.3
80th Percentile		5.3	11682.0	4.8		74.0	90.3	10440.0	6.7	292.2	2444.0	79.3	6.0	15720.0	6636.0	66.4	14440.0	10720.0	46820.0	9056.0	37.2	3794.0	17720.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-15. Groundwater Quality Data for Bore MB12-31S/D, RN025165, RN025170, and RN025171, Near Western Toe of the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-31S (Dry Season)																							
MB12-31S	30-Oct-14	7.2	1350			552	673	122	<5	19	182	10	0	27	20.0	0.0	73	2	38	2.89	0.08	192	7
MB12-31S (Wet Season)																							
MB12-31S	14-Feb-13	7.1	924			328	400	121	<5	36	93	6	0	27	<20	<0.2	17	1	59	1.10	<0.1	3	2
MB12-31S	21-Apr-15	7.2	989			488	595	87	<5	27	96	6	<0.1	25	8.0	0.0	4	1	9	0.99	0.01	6	5
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.1	924.0	0.0	0.0	328.0	400.2	86.7	0.0	26.6	93.0	5.6	0.3	25.1	8.0	0.0	3.9	0.5	8.9	1.0	0.0	3.3	2.0
Maximum		7.2	989.4	0.0	0.0	488.0	595.4	121.0	0.0	35.9	95.8	5.6	0.3	27.0	8.0	0.0	16.7	0.8	59.0	1.1	0.0	5.9	4.9
Mean		7.2	956.7			408.0	497.8	103.9		31.3	94.4	5.6	0.3	26.1	8.0	0.0	10.3	0.7	33.9	1.0	0.0	4.6	3.5
Standard Deviation		0.1	46.2			113.1	138.0	24.3		6.6	2.0	0.0		1.3			9.1	0.2	35.4	0.1		1.9	2.1
80th Percentile		7.2	976.3			456.0	556.3	114.1		34.0	95.2	5.6	0.3	26.6	8.0	0.0	14.1	0.7	49.0	1.1	0.0	5.4	4.3
RN025165 (Dry Season)																							
RN025165	13-Oct-10	6.2	335					98	<5	2	28	5	3	18	3800.0		12	3	337	2.30	0.70	1	55
RN025169 (Wet Season)																							
RN025169	28-Feb-14	6.4	293			22	27	91	<5	2	33	3	2	25	4.0	<0.02	53	6	21	7.87	0.13	0	9
RN025169	15-Feb-13	6.5	416			46		110	<5	7	41	3	2	30	<20	<0.2	18	2	72	2.60	0.10	1	6
No. of samples		2.0	2.0	0.0	0.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.4	293.2	0.0	0.0	22.0	26.8	90.8	0.0	1.9	33.2	2.9	1.5	24.9	4.0	0.0	17.8	1.8	20.8	2.6	0.1	0.4	6.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Maximum		6.5	416.0	0.0	0.0	46.0	26.8	110.0	0.0	6.6	41.3	3.3	1.9	30.0	4.0	0.0	53.2	5.9	72.4	7.9	0.1	0.5	9.1
Mean		6.4	354.6			34.0	26.8	100.4		4.3	37.3	3.1	1.7	27.5	4.0		35.5	3.8	46.6	5.2	0.1	0.4	7.6
Standard Deviation		0.1	86.8			17.0		13.6		3.3	5.7	0.3	0.3	3.6			25.0	2.9	36.5	3.7	0.0	0.1	2.2
80th Percentile		6.5	391.4			41.2	26.8	106.2		5.7	39.7	3.2	1.8	29.0	4.0		46.1	5.1	62.1	6.8	0.1	0.5	8.5
RN025170 (Dry Season)																							
RN025170	13-Oct-10	7.2	1054					326	<5	7	131	10	1	661	400.0		4	2	52	2.90	2.60	2	35
RN025170	9-Oct-12	7.0	1132			180	220	367	<5	8	133	11	1	7	4.0	<0.02	0	1	14	0.99	0.03	1	2
No. of samples		2.0	2.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.0	1054.0	0.0	0.0	180.0	219.6	326.0	0.0	6.9	131.0	10.3	0.5	6.9	4.0	0.0	0.4	0.6	14.0	1.0	0.0	1.2	2.2
Maximum		7.2	1132.0	0.0	0.0	180.0	219.6	367.0	0.0	8.3	133.0	10.8	0.8	661.0	400.0	0.0	4.3	1.9	52.4	2.9	2.6	2.5	35.0
Mean		7.1	1093.0			180.0	219.6	346.5		7.6	132.0	10.6	0.7	334.0	202.0		2.3	1.2	33.2	1.9	1.3	1.8	18.6
Standard Deviation		0.2	55.2					29.0		1.0	1.4	0.4	0.2	462.5	280.0		2.8	0.9	27.2	1.4	1.8	0.9	23.2
80th Percentile		7.2	1116.4			180.0	219.6	358.8		8.0	132.6	10.7	0.7	530.2	320.8		3.5	1.6	44.7	2.5	2.1	2.2	28.4
RN025170 (Wet Season)																							
RN025170	22-Feb-11	6.5	886					271	<5	8	100	7	0	32	<200	<0.2	8	0	1	1.20	<0.1	2	2
RN025170	23-Feb-12	6.9	742			70	85	250	<5	5	80	5	0	19	<20	<0.2	0	0	33	0.59	<0.1	1	1
No. of samples		2.0	2.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	742.0	0.0	0.0	70.0	85.4	250.0	0.0	4.9	80.2	4.8	0.4	19.0	0.0	0.0	0.2	0.3	1.2	0.6	0.0	0.6	1.0
Maximum		6.9	886.0	0.0	0.0	70.0	85.4	271.0	0.0	8.3	100.0	7.4	0.4	32.0	0.0	0.0	8.2	0.4	33.4	1.2	0.0	2.0	2.0
Mean		6.7	814.0			70.0	85.4	260.5		6.6	90.1	6.1	0.4	25.5			4.2	0.4	17.3	0.9		1.3	1.5
Standard Deviation		0.3	101.8					14.8		2.4	14.0	1.8	0.0	9.2			5.6	0.1	22.8	0.4		1.0	0.7
80th Percentile		6.9	857.2			70.0	85.4	266.8		7.6	96.0	6.9	0.4	29.4			6.6	0.4	27.0	1.1		1.7	1.8
RN025171 (Wet Season)																							
RN025171	28-Feb-13	5.7	5460			24	29	3,860	<5	105	938	19	5	191	1020.0	1.6	1,770	733	2,830	644.00	1.20	3	558

Red numbers indicate that the concentration was below the indicated detection limit

Table B-16. Groundwater Quality Data for Bore RN025172, Near Eastern Toe of the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN025172 (Dry Season)																							
RN025172	11-Aug-10	6.4	4053			49	59	2,960	<5	288	552	4	5	15	1600.0	1.0	2	1040	1,650	618.00	<0.1	49	411
RN025172	30-Sep-13	5.7	3530			18	22	2,030	<5	202	395	3	5	15	220.0	9.2	178	349	556	198.00	2.26	7	258
RN025172	22-Aug-11	6.1	4616			16	20	3,430	<5	399	627	3	4	10	758.0	9.6	5	326	629	194.00	24.90	6	243
RN025172	27-Sep-12	5.6	4920			21	25	3,110	<5	328	587	3	5	12	434.0	4.1	42	374	265	196.00	8.60	8	178
No. of samples		4.0	4.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.6	3530.0	0.0	0.0	16.0	19.5	2030.0	0.0	202.0	395.0	2.7	4.1	9.9	220.0	1.0	2.1	326.0	265.0	194.0	2.3	6.0	178.0
Maximum		6.4	4920.0	0.0	0.0	48.5	59.2	3430.0	0.0	399.0	627.0	3.7	5.0	15.2	1600.0	9.6	178.0	1040.0	1650.0	618.0	24.9	48.7	411.0
Mean		6.0	4279.8			25.8	31.5	2882.5		304.3	540.3	3.0	4.7	13.1	753.0	6.0	56.8	522.3	775.0	301.5	11.9	17.5	272.5
Standard Deviation		0.4	615.5			15.3	18.6	601.2		82.2	101.6	0.5	0.4	2.5	606.4	4.1	82.9	345.7	604.2	211.0	11.7	20.9	98.6
80th Percentile		6.2	4737.6			31.8	38.8	3238.0		356.4	603.0	3.2	4.9	15.1	1094.8	9.3	96.6	640.4	1037.4	366.0	18.4	24.3	319.2
RN025172 (Wet Season)																							
RN025172	19-Feb-13	5.5	2538			19	23	1,510	<5	157	294	2	3	45	258.0	3.7	108	320	100	182.00	0.46	6	210
RN025172	12-Feb-14	5.6	1520			44	54	687	<5	83	134	1	2	56	96.0	1.1	72	157	243	84.00	0.37	12	83
RN025172	22-Feb-11	5.0	1245					589	<5	78	109	1	2	31	<200	2.0	142	219	286	129.00	0.50	16	156
RN025172	22-Feb-12	5.5	2360			324	395	1,430	<5	167	265	2	2	46	538.0	1.8	8	214	231	153.00	0.95	13	116

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
No. of samples		4.0	4.0	0.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.0	1245.0	0.0	0.0	19.0	23.2	589.0	0.0	77.9	109.0	1.2	1.6	31.0	96.0	1.1	8.2	157.0	100.0	84.0	0.4	6.5	83.4
Maximum		5.6	2538.0	0.0	0.0	324.0	395.3	1510.0	0.0	167.0	294.0	2.0	2.8	56.1	538.0	3.7	142.0	320.0	286.0	182.0	1.0	16.0	210.0
Mean		5.4	1915.8			129.0	157.4	1054.0		121.3	200.5	1.6	2.1	44.4	297.3	2.1	82.4	227.5	215.0	137.0	0.6	11.9	141.4
Standard Deviation		0.3	630.1			169.3	206.6	483.1		47.3	92.6	0.4	0.5	10.3	223.6	1.1	57.3	67.8	80.2	41.4	0.3	4.0	54.6
80th Percentile		5.6	2431.2			212.0	258.6	1462.0		161.0	276.6	1.9	2.3	49.7	426.0	2.7	121.6	259.4	260.2	164.6	0.7	14.1	177.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-17. Groundwater Quality Data for Bore RN025173, Near Eastern Toe of the Main WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN025173 (Dry Season)																							
RN025173	27-Oct-08		4083	6.2		50	61	3,370	<5	38	887	10	1	18	200.0	-	8	28	4,440	76.00	-	3	18
RN025173	23-Aug-11	6.0	5030			54	66	3,550	<5	47	899	9	0	15	<20	1.2	4	13	4,000	172.00	14.20	4	11
RN025173	18-Oct-12	6.0	5040			72	88	3,400	<5	48	860	9	1	19	30.0	0.5	2,420	57	4,170	222.00	0.73	3	67
RN025173	11-Aug-10	6.1	4616			72	88	3,800	<5	45	962	11	1	232	<200	<0.2	40	16	4,170	161.00	0.40	3	45
No. of samples		3.0	4.0	1.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.0	4083.0	6.2	0.0	50.0	61.0	3370.0	0.0	38.0	860.0	8.7	0.1	14.5	30.0	0.5	3.6	13.3	4000.0	76.0	0.4	2.8	10.9
Maximum		6.1	5040.0	6.2	0.0	72.4	88.3	3800.0	0.0	48.0	962.0	10.6	0.8	232.0	200.0	1.2	2420.0	56.8	4440.0	222.0	14.2	4.0	66.8
Mean		6.0	4692.3	6.2		62.1	75.8	3530.0		44.6	902.0	9.5	0.5	70.9	115.0	0.9	618.0	28.4	4195.0	157.8	5.1	3.4	35.2
Standard Deviation		0.0	451.7			11.8	14.4	196.5		4.5	43.2	0.9	0.3	107.4	120.2	0.5	1201.5	20.0	181.9	60.6	7.9	0.5	25.7
80th Percentile		6.0	5034.0	6.2		72.2	88.0	3650.0		47.3	924.2	10.2	0.6	104.2	166.0	1.1	991.9	39.5	4278.0	192.0	8.8	3.6	53.7
RN025173 (Wet Season)																							
RN025173	8-Apr-09	6.2	5580				975	3,640		42	911			12	400.0	0.2	9	17	3,440	114.00	<0.1	7	15
RN025173	22-Feb-12	6.1	5530			874	1066	3,790	<5	49	961	10	<1	19	<20	<0.2	2	13	4,180	150.00	<0.1	4	5
RN025173	24-Feb-11	6.0	4769					3,040	<5	39	779	9	0	27	<200	<0.2	3	11	3,780	159.00	0.40	5	7
No. of samples		3.0	3.0	0.0	0.0	1.0	2.0	3.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.0	4769.0	0.0	0.0	874.0	975.2	3040.0	0.0	39.4	779.0	8.9	0.4	12.0	400.0	0.2	2.3	11.0	3440.0	114.0	0.4	4.1	4.7
Maximum		6.2	5580.0	0.0	0.0	874.0	1066.3	3790.0	0.0	48.7	961.0	9.7	0.4	27.0	400.0	0.2	8.6	17.3	4180.0	159.0	0.4	7.1	15.0
Mean		6.1	5293.0			874.0	1020.7	3490.0		43.3	883.7	9.3	0.4	19.4	400.0	0.2	4.5	13.8	3800.0	141.0	0.4	5.5	8.9
Standard Deviation		0.1	454.5				64.4	396.9		4.8	94.0	0.6		7.5			3.6	3.2	370.4	23.8		1.5	5.4
80th Percentile		6.1	5560.0			874.0	1048.1	3730.0		45.9	941.0	9.5	0.4	23.9	400.0	0.2	6.2	15.6	4020.0	155.4	0.4	6.3	11.8

Red numbers indicate that the concentration was below the indicated detection limit

Table B-18. Groundwater Quality Data for Bore RN022037, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022037 (Dry Season)																							
RN022037	27-Oct-08	5.9	6440				37	5,730	<5	84	1,530	18	2	177	1000.0	1.6	504	318	693	241.00	2.20	70	275
RN022037	6-Sep-11	6.2	6860			112	137	5,160	<5	74	1,310	17	1	8	74.0	0.6	108	100	359	54.30	<0.1	39	65
RN022037	18-Oct-12	6.2	6790			84	102	4,790	<5	84	1,200	14	3	107	1430.0	2.5	812	609	869	418.00	0.86	82	479
RN022037	11-Aug-10	5.7	5270					5,360	<5	70	1,430	18	3	37	<200	0.6	181	125	403	80.90	0.80	47	150
RN022037	11-Aug-10	6.2	6520	-		123	150	5,680	<5	70	1,450	19	3	38	<200	1.0	183	129	419	81.70	0.90	47	150

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
No. of samples		5.0	5.0	1.0	0.0	3.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		5.7	5270.0	0.0	0.0	84.0	36.6	4790.0	0.0	69.6	1200.0	14.4	1.4	8.3	74.0	0.6	108.0	100.0	359.0	54.3	0.8	38.9	65.4
Maximum		6.2	6860.0	0.0	0.0	123.3	150.4	5730.0	0.0	84.2	1530.0	18.9	3.0	177.0	1430.0	2.5	812.0	609.0	869.0	418.0	2.2	82.1	479.0
Mean		6.1	6376.0			106.4	106.5	5344.0		76.3	1384.0	17.1	2.5	73.5	834.7	1.3	357.6	256.2	548.6	175.2	1.2	57.0	223.9
Standard Deviation		0.2	643.0			20.2	50.8	388.2		7.2	129.5	1.7	0.7	68.3	693.0	0.8	296.6	215.7	222.2	154.5	0.7	18.1	161.0
80th Percentile		6.2	6804.0			118.8	142.1	5690.0		83.9	1466.0	17.9	2.9	121.0	1258.0	1.8	565.6	376.2	728.2	276.4	1.4	72.3	315.8
RN022037 (Wet Season)																							
RN022037	8-Apr-09	6.1	7900				853	5,670	<5	84	1,430			58	600.0	1.0	199	235	626	178.00	0.60	44	175
RN022037	14-Feb-11	6.3	7030					4,940	<5	66	1,230	17	2	61	800.0	0.8	192	210	522	153.00	0.60	54	154
RN022037	22-Feb-12	6.1	6840			1054	1286	5,220	<5	78	1,320	16	2	86	1160.0	1.3	247	280	600	184.00	0.79	43	186
No. of samples		3.0	3.0	0.0	0.0	1.0	2.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.1	6840.0	0.0	0.0	1054.0	853.3	4940.0	0.0	65.8	1230.0	16.0	1.8	58.0	600.0	0.8	192.0	210.0	522.0	153.0	0.6	42.9	154.0
Maximum		6.3	7900.0	0.0	0.0	1054.0	1285.9	5670.0	0.0	83.6	1430.0	17.4	2.3	85.8	1160.0	1.3	247.0	280.0	626.0	184.0	0.8	54.1	186.0
Mean		6.1	7256.7			1054.0	1069.6	5276.7		75.6	1326.7	16.7	2.1	68.3	853.3	1.0	212.7	241.7	582.7	171.7	0.7	47.0	171.7
Standard Deviation		0.1	565.2			#DIV/0!	305.9	368.3		9.0	100.2	1.0	0.4	15.3	283.8	0.3	29.9	35.5	54.1	16.4	0.1	6.2	16.3
80th Percentile		6.2	7552.0			1054.0	1199.4	5490.0		81.2	1386.0	17.1	2.2	75.9	1016.0	1.2	227.8	262.0	615.6	181.6	0.7	50.1	181.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-19. Groundwater Quality Data for Bore RN022039, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022039 (Dry Season)																							
RN022039	28-Oct-08	5.5	72				16	4	<5	4	5	2	0.2	7	200.0	<0.2	1	2	60	1.90	<0.1	0.2	<5
RN022039	5-Sep-11	5.8	71			26	32	5	<5	4	4	1	0.1	17	46.0	<0.02	34	1	61	1.60	0.04	0.1	5
RN022039	9-Oct-12	5.8	93			34	42	5	<5	5	5	1	0.2	10	398.0	0.0	0	3	254	12.10	0.04	0.2	6
RN022039	21-Sep-10	5.1				14	18	4	<5	3	4	1	0.3	9	<200	<0.2	5	1	47	1.40	<0.1	0.1	25
RN022039	31-Oct-14	5.8	79			27	33	5	<5	5	5	1	0.2	8	244.0	0.0	32	4	180	4.62	0.15	0.2	6
RN022039	10-Oct-13	5.6	101			28	34	21	<5	5	7	2	0.3	4,820	2100.0	0.1	460	62	403	55.60	2.97	1	26
RN022039	5-Sep-11	5.8	71			26	32	5	<5	4	4	1	0.1	17	46.0	<0.02	34	1	61	1.60	0.04	0.1	5
No. of samples		7.0	6.0	0.0	0.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum		5.1	70.5	0.0	0.0	14.2	16.0	4.0	0.0	3.4	4.0	1.2	0.1	7.0	46.0	0.0	0.1	0.7	47.0	1.4	0.0	0.1	5.2
Maximum		5.8	100.9	0.0	0.0	34.2	41.7	20.6	0.0	5.1	7.1	1.7	0.3	4820.0	2100.0	0.1	460.0	62.3	403.0	55.6	3.0	1.4	26.4
Mean		5.6	80.8			25.9	29.4	7.1		4.2	5.0	1.4	0.2	698.1	505.7	0.0	80.7	10.5	152.4	11.3	0.6	0.3	12.3
Standard Deviation		0.2	13.0			6.5	9.2	6.0		0.6	1.1	0.2	0.1	1817.6	792.2	0.0	168.0	22.8	135.5	19.9	1.3	0.5	10.4
80th Percentile		5.8	92.6			28.0	33.9	5.4		4.8	5.3	1.5	0.3	16.5	398.0	0.1	34.0	3.5	239.2	10.6	0.7	0.2	25.0
RN022039 (Wet Season)																							
RN022039	15-Feb-11	4.3	50					3		4	3	1	0.3	22	<200	<0.2	26	1	7	1.30		1	2
RN022039	8-Apr-09	5.7	64				17	3	<5	3	3	1	<0.1	40	<200	<0.2	3	0.4	24	1.10	0.20	0.2	<5
RN022039	23-Feb-12	5.5	60			10	12	5	<5	2	3	1	<0.1	43	46.0	0.0	2	1	10	3.31	0.09	0.3	7
RN022039	14-Feb-13	5.6	101			33	41	6	<5	4	6	2	0.2	39	162.0	0.1	177	5	171	6.88	0.14	0.2	26
RN022039	12-Feb-14	5.7	72			16	20	9	<5	3	4	1	0.2	59	66.0	0.0	11	1	16	1.94	0.60	1	16
No. of samples		5.0	5.0	0.0	0.0	3.0	4.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Minimum		4.3	50.1	0.0	0.0	10.2	12.4	3.2	0.0	2.4	3.1	0.9	0.2	22.0	46.0	0.0	2.2	0.4	6.9	1.1	0.1	0.2	2.0
Maximum		5.7	101.0	0.0	0.0	33.2	40.5	9.0	0.0	4.3	5.6	1.7	0.3	58.6	162.0	0.1	177.0	5.5	171.0	6.9	0.6	0.8	25.5
Mean		5.3	69.3			19.9	22.5	5.3		3.3	3.8	1.2	0.2	40.4	91.3	0.1	43.8	1.7	45.6	2.9	0.3	0.5	12.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)										Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic												300.0		1000		100				3000
ADWG 2015 Health													2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%											150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%											80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%											55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation											5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500										5000		10.0	400	1000		1000.00	100.00	200	20000
Standard Deviation		0.6	19.4		11.9	12.4	2.4		0.8	1.0	0.3	0.1	13.0	62.0	0.0	75.1	2.2	70.4	2.4	0.2	0.3	10.3
80th Percentile		5.7	78.0		26.4	28.1	6.6		3.9	4.1	1.4	0.3	45.9	123.6	0.1	56.1	2.2	53.2	4.0	0.4	0.8	19.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-20. Groundwater Quality Data for Bore RN022081, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022081 (Dry Season)																							
RN022081	22-Sep-10	7.0	1834	-				787	5	116	185	6	1	5	400.0	<0.2		0.1	35	1.30	0.40	85	5
RN022081	5-Sep-11	7.0	1786			168	205	783	5	121	183	6	1	<1	414.0	<0.2	<0.1	<0.1	76	<0.1	<0.1	51	<1
RN022081	19-Oct-12	7.0	1982			228	278	841	10	128	187	7	1	12	172.0	<0.02	0	0.1	26	1.36	0.02	46	1
RN022081	1-Dec-14	7.3	1914			210	256	789	5	110	198	7	1	5	558.0	<0.02	1	1	293	0.77	0.03	29	0.1
No. of samples		4.0	4.0	1.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.0	1786.0	0.0	0.0	168.0	205.0	783.0	5.0	110.0	183.0	6.3	0.5	5.0	172.0	0.0	0.0	0.1	25.6	0.8	0.0	28.8	0.1
Maximum		7.3	1982.0	0.0	0.0	228.0	278.2	841.0	10.0	128.0	198.0	7.0	1.0	11.9	558.0	0.0	0.6	0.5	293.0	1.4	0.4	84.6	5.0
Mean		7.1	1878.9			202.0	246.4	800.0	6.3	118.8	188.3	6.6	0.7	7.3	386.0		0.3	0.2	107.4	1.1	0.2	52.6	2.1
Standard Deviation		0.1	86.6			30.8	37.6	27.4	2.5	7.6	6.7	0.4	0.2	4.0	159.5		0.4	0.2	125.6	0.3	0.2	23.3	2.6
80th Percentile		7.1	1941.0			220.8	269.4	809.8	7.0	123.8	191.4	6.9	0.8	9.2	471.6		0.5	0.3	162.7	1.3	0.3	64.3	3.4
RN022081 (Wet Season)																							
RN022081	15-Feb-11	6.2	1667					726	10	104	169	7	1	18	1400.0	<0.2	0	0.2	194	2.50		53	3
RN022081	23-Feb-12	8.3	1635			178	217	702	10	31	195	8	3	39	382.0	<0.2	0	<0.1	616	<0.1	<0.1	2	1
RN022081	14-Feb-13	7.0	2224			244	298	1,010	10	147	224	8	0	26	384.0	<0.1	2	1	92	1.45	0.09	43	12
RN022081	21-Feb-14	7.3	1931			198	242	780	10	103	187	7	1	37	114.0	<0.1	3	2	246	<10	<0.05	34	2
No. of samples		4.0	4.0	0.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Minimum		6.2	1635.0	0.0	0.0	178.0	217.2	702.0	10.0	30.9	169.0	6.7	0.2	18.0	114.0	0.0	0.1	0.2	92.2	1.5	0.1	2.1	1.0
Maximum		8.3	2224.0	0.0	0.0	244.0	297.7	1010.0	10.0	147.0	224.0	8.3	2.8	38.8	1400.0	0.0	2.7	2.4	616.0	2.5	0.1	53.1	11.7
Mean		7.2	1864.3			206.7	252.1	804.5	10.0	96.2	193.8	7.5	1.2	29.9	570.0		1.2	1.1	287.1	2.0	0.1	33.1	4.4
Standard Deviation		0.8	274.1			33.8	41.3	140.8	0.0	48.1	22.9	0.7	1.1	9.7	567.7		1.3	1.2	228.4	0.7		22.1	5.0
80th Percentile		7.7	2048.2			225.6	275.2	872.0	10.0	121.2	206.6	7.9	1.7	37.6	790.4		2.1	1.7	394.0	2.3	0.1	46.9	6.5

Red numbers indicate that the concentration was below the indicated detection limit

Table B-21. Groundwater Quality Data for Bore MB10-3, Near the EFDC

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-3 (Dry Season)																							
MB10-3	13-Dec-10	3.8	2079				0	1,160	<5	99	204		3	8,410	600.0	5.6	3,600	965	2,320	920.00		187	1,430
MB10-3	2-Oct-13	6.7	2086																				
MB10-3	23-Aug-11	5.7	2200			120	146	1,070	<5	97	220	10	2	44	<20	0.9	250	1,580	3,610	1320.00	0.17	111	101
No. of samples		3.0	3.0	0.0	0.0	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Minimum		3.8	2079.0	0.0	0.0	120.0	0.0	1070.0	0.0	96.7	204.0	10.3	1.8	43.8	600.0	0.9	250.0	965.0	2320.0	920.0	0.2	111.0	101.0
Maximum		6.7	2200.0	0.0	0.0	120.0	146.4	1160.0	0.0	99.3	220.0	10.3	2.8	8410.0	600.0	5.6	3600.0	1580.0	3610.0	1320.0	0.2	187.0	1430.0
Mean		5.4	2121.7			120.0	73.2	1115.0		98.0	212.0	10.3	2.3	4226.9	600.0	3.3	1925.0	1272.5	2965.0	1120.0	0.2	149.0	765.5
Standard Deviation		1.5	67.9				103.5	63.6		1.8	11.3		0.7	5915.8		3.3	2368.8	434.9	912.2	282.8		53.7	939.7
80th Percentile		6.3	2154.4			120.0	117.1	1142.0		98.8	216.8	10.3	2.6	6736.8	600.0	4.7	2930.0	1457.0	3352.0	1240.0	0.2	171.8	1164.2

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-3 (Wet Season)																							
MB10-3	9-Feb-11	4.2	1302				0	658		67	113	2	2	6,030	600.0	5.6	3,630	865	2,130	893.00	7.30	115	1,670
MB10-3	2-Mar-12	5.7	1244			16	20	599	<5	67	108	8	5	301	1080.0	2.9	686	404	1,250	435.00	0.16	16	925
MB10-3	12-Feb-13	4.3	2347		152		0	1,350	<5	121	253	5	3	8,300	600.0	6.0	3,740	977	2,450	897.00	7.07	206	1,500
MB10-3	10-Feb-14	4.7	1119			3	4	493	<5	50	90	2	2	3,260	542.0	3.1	2,410	530	1,810	557.00	2.38	73	1,030
MB10-3	27-Mar-15	5.6	1798			10	12	874	<5	80	177	6	2	268	9800.0	2.6	82	501	2,000	484.00	0.15	9	844
No. of samples		5.0	5.0	0.0	1.0	3.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		4.2	1119.0	0.0	152.0	3.2	0.0	493.0	0.0	50.4	90.4	2.1	1.7	268.0	542.0	2.6	82.1	404.0	1250.0	435.0	0.2	9.1	844.0
Maximum		5.7	2347.0	0.0	152.0	16.0	19.5	1350.0	0.0	121.0	253.0	8.4	4.8	8300.0	9800.0	6.0	3740.0	977.0	2450.0	897.0	7.3	206.0	1670.0
Mean		4.9	1562.0		152.0	9.8	7.2	794.8		77.0	148.3	4.8	2.8	3631.8	2524.4	4.0	2109.6	655.4	1928.0	653.2	3.4	83.7	1193.8
Standard Deviation		0.7	509.2			6.4	8.6	340.1		26.7	67.1	2.7	1.3	3538.8	4073.0	1.6	1673.1	250.1	445.0	225.0	3.6	80.9	368.1
80th Percentile		5.7	1907.9		152.0	13.7	13.9	969.2		88.0	192.2	6.6	3.5	6484.0	2824.0	5.7	3652.0	887.4	2194.0	893.8	7.1	133.2	1534.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-22. Groundwater Quality Data for Bore MB10-4, Near the EFDC

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-4 (Dry Season)																							
MB10-4	25-Aug-11	6.8	2435			200	244	1,150	<5	98	271	9	2	13	<20	<0.2	7	1	32	0.55	0.22	15	4
MB10-4	17-Oct-12	6.7	2653			184	224	1,200	<5	101	288	10	2	13	26.0	<0.1	5	1	50	2.03	0.33	11	31
MB10-4	2-Oct-13	6.8	2745			190	232	1,210	<5	103	290	11	2	19	282.0	<0.1	0	4	143	3.37	0.07	36	15
MB10-4	21-Oct-14	6.8	2208			252	307	1,250	<5	106	306	11	2	18	336.0	<0.2	15	10	117	8.07	0.07	12	<0.5
MB10-4	13-Dec-10	6.8	2232				0	1,090	<5	91	261	6	2	23	<200	<0.2	2	1	40	1.70	2.70	10	6
No. of samples		5.0	5.0	0.0	0.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.7	2208.0	0.0	0.0	184.0	0.0	1090.0	0.0	91.1	261.0	6.4	1.9	12.7	26.0	0.0	0.2	0.9	31.7	0.6	0.1	10.4	3.5
Maximum		6.8	2745.0	0.0	0.0	252.0	307.4	1250.0	0.0	106.0	306.0	11.1	2.4	23.0	336.0	0.0	14.9	9.5	143.0	8.1	2.7	35.6	30.5
Mean		6.8	2454.6			206.5	201.5	1180.0		99.7	283.2	9.5	2.1	17.1	214.7		5.7	3.4	76.3	3.1	0.7	16.9	13.7
Standard Deviation		0.0	242.1			31.0	117.3	61.6		5.7	17.5	1.9	0.2	4.3	165.6		5.8	3.6	50.3	2.9	1.1	10.6	12.2
80th Percentile		6.8	2671.4			220.8	256.7	1218.0		103.6	293.2	10.7	2.2	19.8	314.4		8.4	4.9	122.2	4.3	0.8	19.4	21.1
MB10-4 (Dry Season)																							
MB10-4	20-Feb-14	6.8	2438			192	234	1,240	<5	101	299	12	3	28	172.0	<0.1	4	25	110	22.40	<0.05	8	6
MB10-4	9-Feb-11	7.2	2195				0	1,090		89	257	11	2	12	<200	<0.2	4	0	11	0.90	0.30	9	5
MB10-4	12-Feb-13	6.8	2425			219	267	1,210	<5	110	294	11	2	56	174.0	<0.1	2	4	135	4.26	0.15	32	5
MB10-4	11-Feb-14	6.7	2370			154	188	1,150	<5	91	275	11	2	61	78.0	<0.1	3	3	38	4.71	0.37	12	16
MB10-4	27-Mar-15	6.5	2506			166	203	1,160	<5	93	279	11	2	16	416.0	<0.1	5	9	51	5.11	<0.05	9	10
No. of samples		5.0	5.0	0.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.5	2195.0	0.0	0.0	154.0	0.0	1090.0	0.0	89.2	257.0	10.5	1.6	12.0	78.0	0.0	1.7	0.3	11.0	0.9	0.2	7.6	5.0
Maximum		7.2	2506.4	0.0	0.0	219.0	267.2	1240.0	0.0	110.0	299.0	12.3	2.5	61.0	416.0	0.0	4.9	25.2	135.0	22.4	0.4	32.4	16.2
Mean		6.8	2386.9			182.8	178.4	1170.0		96.8	280.8	11.3	2.0	34.6	210.0		3.5	8.5	68.8	7.5	0.3	14.2	8.3
Standard Deviation		0.2	117.7			28.9	104.3	57.9		8.7	16.6	0.7	0.3	22.5	144.5		1.3	9.9	51.8	8.5	0.1	10.3	4.8
80th Percentile		6.9	2451.7			202.8	240.8	1216.0		102.8	295.0	11.6	2.3	56.7	270.8		4.5	12.5	115.0	8.6	0.3	16.2	11.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-23. Groundwater Quality Data for Bores MB12-25 and MB12-26, Near the EFDC

		FIELD DATA	LAB DATA	MAJOR IONS (in mg/L)	DISSOLVED METALS (in ug/L)

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB12-25 (Dry Season)																							
MB12-25	7-Nov-12	6.5	2760			122	149	1,530	5	242	273	9	2	67	<20	<0.2	6	2	46	2.10	0.10	1	13
MB12-25	29-Oct-14	6.6	2537			102	124	1,570	5	247	288	8	2	6	60.0	<0.2	57	6	64	8.30	<0.1	2	7
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	2537.0	0.0	0.0	102.0	124.4	1530.0	5.0	242.0	273.0	8.4	1.6	6.0	60.0	0.0	6.2	1.6	45.5	2.1	0.1	0.6	6.9
Maximum		6.6	2760.0	0.0	0.0	122.0	148.8	1570.0	5.0	247.0	288.0	9.2	1.6	67.0	60.0	0.0	57.0	6.3	63.9	8.3	0.1	1.8	13.0
Mean		6.5	2648.5			112.0	136.6	1550.0	5.0	244.5	280.5	8.8	1.6	36.5	60.0		31.6	4.0	54.7	5.2	0.1	1.2	10.0
Standard Deviation		0.0	157.7			14.1	17.3	28.3	0.0	3.5	10.6	0.6	0.0	43.1			35.9	3.3	13.0	4.4		0.9	4.3
80th Percentile		6.5	2715.4			118.0	144.0	1562.0	5.0	246.0	285.0	9.0	1.6	54.8	60.0		46.8	5.4	60.2	7.1	0.1	1.6	11.8
MB12-25 (Wet Season)																							
MB12-25	19-Feb-13	6.5	2921			125	153	1,490	5	239	267	8	2	29	30.0	<0.1	3	2	34	3.13	0.05	3	10
MB12-25	4-Feb-14	6.5	2818			114	139	1,440	5	227	262	8	1	15	<10	<0.1	14	1	25	2.50	0.20	1	42
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	2818.0	0.0	0.0	114.0	139.1	1440.0	5.0	227.0	262.0	7.9	1.2	15.0	30.0	0.0	3.3	1.2	24.6	2.5	0.1	1.1	9.9
Maximum		6.5	2921.0	0.0	0.0	125.0	152.5	1490.0	5.0	239.0	267.0	8.1	1.5	28.5	30.0	0.0	14.3	1.7	34.3	3.1	0.2	2.8	41.8
Mean		6.5	2869.5			119.5	145.8	1465.0	5.0	233.0	264.5	8.0	1.4	21.8	30.0		8.8	1.5	29.5	2.8	0.1	1.9	25.9
Standard Deviation		0.0	72.8			7.8	9.5	35.4	0.0	8.5	3.5	0.1	0.2	9.5			7.8	0.4	6.9	0.4	0.1	1.2	22.6
80th Percentile		6.5	2900.4			122.8	149.8	1480.0	5.0	236.6	266.0	8.1	1.4	25.8	30.0		12.1	1.6	32.4	3.0	0.2	2.4	35.4
MB12-26 (Dry Season)																							
MB12-26	6-Nov-12	6.5	2309			191	233	1,080	10	218	200	13	2	10	<20	<0.2	6	7	246	2.30	<0.1	2	7
MB12-26	7-Oct-13	6.4	2338			156	190	970	5	189	174	12	1	11	32.0	<0.1	85	6	108	3.94	<0.05	3	10
MB12-26	29-Oct-14	6.4	1821			122	149	973	5	180	178	15	1	2	16.0	<0.02	69	6	98	3.98	0.04	1	6
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.4	1821.0	0.0	0.0	122.0	148.8	970.0	5.0	180.0	174.0	12.2	0.8	2.4	16.0	0.0	6.1	5.6	98.4	2.3	0.0	1.0	5.6
Maximum		6.5	2338.0	0.0	0.0	191.2	233.3	1080.0	10.0	218.0	200.0	14.7	1.6	10.5	32.0	0.0	85.4	7.3	246.0	4.0	0.0	2.8	10.0
Mean		6.4	2156.0			156.4	190.8	1007.7	6.7	195.7	184.0	13.1	1.2	7.6	24.0		53.6	6.3	150.8	3.4	0.0	2.0	7.5
Standard Deviation		0.1	290.5			34.6	42.2	62.7	2.9	19.9	14.0	1.4	0.4	4.5	11.3		41.9	0.9	82.6	1.0		0.9	2.2
80th Percentile		6.4	2326.4			177.1	216.1	1037.2	8.0	206.4	191.2	13.8	1.4	10.3	28.8		78.9	6.8	190.8	4.0	0.0	2.5	8.8
MB12-26 (Wet Season)																							
MB12-26	19-Feb-13	6.4	2435			188	229	1,080	10	216	193	12	1	27	42.0	<0.1	2	5	122	4.18	0.07	5	19
MB12-26	4-Feb-14	6.4	1946			140	171	860	5	165	160	12	1	15	<10	<0.1	38	5	99	2.92	0.28	2	15
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.4	1946.0	0.0	0.0	140.0	170.8	860.0	5.0	165.0	160.0	11.9	0.8	14.8	42.0	0.0	2.5	4.8	99.0	2.9	0.1	2.1	14.6
Maximum		6.4	2435.0	0.0	0.0	188.0	229.4	1080.0	10.0	216.0	193.0	12.1	1.0	26.9	42.0	0.0	37.7	5.0	122.0	4.2	0.3	5.1	18.8
Mean		6.4	2190.5			164.0	200.1	970.0	7.5	190.5	176.5	12.0	0.9	20.9	42.0		20.1	4.9	110.5	3.6	0.2	3.6	16.7
Standard Deviation		0.0	345.8			33.9	41.4	155.6	3.5	36.1	23.3	0.1	0.1	8.6			24.9	0.1	16.3	0.9	0.1	2.1	3.0
80th Percentile		6.4	2337.2			178.4	217.6	1036.0	9.0	205.8	186.4	12.1	1.0	24.5	42.0		30.7	4.9	117.4	3.9	0.2	4.5	18.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-24. Groundwater Quality Data for Bores MB12-27 and MB12-28, Near the EFDC

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

		EC (field)												Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water		4500												5000		10.0	400	1000		1000.00	100.00	200	20000
MB12-27 (Dry Season)																							
MB12-27	6-Nov-12	7.2	1309			250	305	368	5	58	55	134	3	19	40.0	<0.2	2	0	462	1.70	4.80	75	<1
MB12-27	30-Oct-14	7.3	1025			162	198	302	<5	67	63	54	2	6	92.0	<0.02	15	1	599	1.22	0.41	33	1
MB12-27	4-Oct-13	7.3	1246			210	256	341	<5	64	61	75	2	27	80.0	<0.02	89	8	694	7.57	1.06	40	3
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.2	1025.0	0.0	0.0	162.0	197.6	302.0	5.0	58.3	55.4	54.2	1.6	6.2	40.0	0.0	1.5	0.4	462.0	1.2	0.4	32.5	1.0
Maximum		7.3	1309.0	0.0	0.0	250.0	305.0	368.0	5.0	66.5	63.4	134.0	3.1	26.8	92.0	0.0	88.8	7.6	694.0	7.6	4.8	75.2	2.6
Mean		7.3	1193.3			207.3	252.9	337.0	5.0	62.8	60.0	87.7	2.4	17.3	70.7		35.1	2.9	585.0	3.5	2.1	49.1	1.8
Standard Deviation		0.0	149.1			44.1	53.8	33.2		4.2	4.1	41.4	0.8	10.4	27.2		47.0	4.0	116.6	3.5	2.4	22.9	1.1
80th Percentile		7.3	1283.8			234.0	285.5	357.2	5.0	65.3	62.5	110.4	2.8	23.7	87.2		59.3	4.8	656.0	5.2	3.3	61.0	2.3
MB12-27 (Wet Season)																							
MB12-27	3-Feb-14	7.3	998			184	224	264	<5	64	64	26	2	12	12.0	<0.02	4	1	770	1.86	4.96	38	4
MB12-27	3-Feb-14	7.3	998			184	224	264	<5	64	64	26	2	12	12.0	<0.02	4	1	770	1.86	4.96	38	4
No. of samples		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum		7.3	998.0	0.0	0.0	184.0	224.5	264.0	0.0	63.5	63.5	25.7	1.6	12.1	12.0	0.0	4.4	0.7	770.0	1.9	5.0	38.1	3.5
Maximum		7.3	998.0	0.0	0.0	184.0	224.5	264.0	0.0	63.5	63.5	25.7	1.6	12.1	12.0	0.0	4.4	0.7	770.0	1.9	5.0	38.1	3.5
Mean		7.3	998.0			184.0	224.5	264.0		63.5	63.5	25.7	1.6	12.1	12.0		4.4	0.7	770.0	1.9	5.0	38.1	3.5
Standard Deviation		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
80th Percentile		7.3	998.0			184.0	224.5	264.0		63.5	63.5	25.7	1.6	12.1	12.0		4.4	0.7	770.0	1.9	5.0	38.1	3.5
MB12-28 (Dry Season)																							
MB12-28	30-Oct-14	6.9	985			162	198	337	<5	77	89	5	0	4	58.0	<0.02	23	1	194	2.02	0.02	1	3
MB12-28	8-Oct-13	6.7	996			132	161	309	<5	65	77	5	0	10	40.0	<0.02	27	2	129	3.81	0.03	1	4
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.7	985.0	0.0	0.0	132.0	161.0	309.0	0.0	65.2	77.4	4.8	0.4	4.1	40.0	0.0	23.3	1.0	129.0	2.0	0.0	0.8	2.7
Maximum		6.9	996.0	0.0	0.0	162.0	197.6	337.0	0.0	77.1	88.6	5.3	0.4	9.6	58.0	0.0	27.1	2.3	194.0	3.8	0.0	1.4	4.2
Mean		6.8	990.5			147.0	179.3	323.0		71.2	83.0	5.1	0.4	6.9	49.0		25.2	1.6	161.5	2.9	0.0	1.1	3.5
Standard Deviation		0.1	7.8			21.2	25.9	19.8		8.4	7.9	0.4	0.0	3.9	12.7		2.7	0.9	46.0	1.3	0.0	0.4	1.1
80th Percentile		6.8	993.8			156.0	190.3	331.4		74.7	86.4	5.2	0.4	8.5	54.4		26.3	2.0	181.0	3.5	0.0	1.3	3.9
MB12-28 (Wet Season)																							
MB12-28	19-Feb-13	6.5	1572			139	170	643	<5	104	138	5	1	27	50.0	0.1	3	3	392	17.10	0.03	4	12
MB12-28	4-Feb-14	6.7	805			140	171	226	<5	50	61	4	0	19	66.0	<0.02	8	1	263	2.88	0.24	1	24
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	805.0	0.0	0.0	139.0	169.6	226.0	0.0	50.3	60.7	4.2	0.4	19.2	50.0	0.1	3.2	1.2	263.0	2.9	0.0	0.8	12.3
Maximum		6.7	1572.0	0.0	0.0	140.0	170.8	643.0	0.0	104.0	138.0	4.8	0.6	27.4	66.0	0.1	7.8	3.2	392.0	17.1	0.2	3.8	24.2
Mean		6.6	1188.5			139.5	170.2	434.5		77.2	99.4	4.5	0.5	23.3	58.0	0.1	5.5	2.2	327.5	10.0	0.1	2.3	18.3
Standard Deviation		0.1	542.4			0.7	0.9	294.9		38.0	54.7	0.4	0.1	5.8	11.3		3.3	1.4	91.2	10.1	0.1	2.1	8.4
80th Percentile		6.7	1418.6			139.8	170.6	559.6		93.3	122.5	4.7	0.6	25.8	62.8	0.1	6.9	2.8	366.2	14.3	0.2	3.2	21.8

Red numbers indicate that the concentration was below the indicated detection limit

Table B-25. Groundwater Quality Data for Bores MB12-29D and MB12-29S, Near the EFDC

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB12-29D (Dry Season)																							
MB12-29D	9-Nov-12	7.3	1882			167	204	835	20	112	147	85	2	45	20.0	0.2	9	12	4,280	25.40	<0.1	12	8

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB12-29D (Wet Season)																							
MB12-29S	9-Oct-13	6.8	2254			226	276	861	5	121	188	24	1	15	228.0	0.2	114	17	1,480	14.70	0.41	3	14
MB12-29S	30-Oct-14	6.8	1824			136	166	930	<5	111	208	20	1	6	98.0	<0.2	5	7	1,370	10.00	<0.1	6	7
MB12-29S	9-Nov-12	6.7	1959			120	146	1,010	<5	141	207	14	1	109	100.0	<0.2	200	26	315	26.30	<0.1	5	60
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.7	1824.0	0.0	0.0	120.0	146.4	861.0	5.0	111.0	188.0	13.5	0.6	6.2	98.0	0.2	4.8	6.7	315.0	10.0	0.4	3.4	7.0
Maximum		6.8	2254.0	0.0	0.0	226.0	275.7	1010.0	5.0	141.0	208.0	23.5	1.0	109.0	228.0	0.2	200.0	25.6	1480.0	26.3	0.4	5.7	60.0
Mean		6.8	2012.3			160.7	196.0	933.7	5.0	124.3	201.0	19.1	0.8	43.4	142.0	0.2	106.3	16.3	1055.0	17.0	0.4	4.7	26.8
Standard Deviation		0.1	219.9			57.1	69.7	74.6		15.3	11.3	5.1	0.2	57.0	74.5		97.8	9.5	643.2	8.4		1.2	28.9
80th Percentile		6.8	2136.0			190.0	231.8	978.0	5.0	133.0	207.6	22.2	0.9	71.4	176.8	0.2	165.6	22.0	1436.0	21.7	0.4	5.5	41.4
MB12-29S (Wet Season)																							
MB12-29S	14-Feb-13	6.9	2526			276	337	1,010	<5	147	214	24	0	26	34.0	<0.2	21	5	2,200	7.36	<0.1	6	4
MB12-29S	26-Feb-14	6.5	1826			70	85	1,000	<5	116	214	9	1	127	288.0	0.2	4	21	678	47.00	0.14	2	26
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.5	1826.0	0.0	0.0	70.0	85.4	1000.0	0.0	116.0	214.0	8.9	0.4	26.1	34.0	0.2	4.2	5.3	678.0	7.4	0.1	2.0	4.3
Maximum		6.9	2526.0	0.0	0.0	276.0	336.7	1010.0	0.0	147.0	214.0	23.9	0.6	127.0	288.0	0.2	21.0	21.1	2200.0	47.0	0.1	6.3	26.1
Mean		6.7	2176.0			173.0	211.1	1005.0		131.5	214.0	16.4	0.5	76.6	161.0	0.2	12.6	13.2	1439.0	27.2	0.1	4.2	15.2
Standard Deviation		0.3	495.0			145.7	177.7	7.1		21.9	0.0	10.6	0.1	71.3	179.6		11.9	11.2	1076.2	28.0		3.0	15.4
80th Percentile		6.8	2386.0			234.8	286.5	1008.0		140.8	214.0	20.9	0.6	106.8	237.2	0.2	17.6	17.9	1895.6	39.1	0.1	5.5	21.7

Red numbers indicate that the concentration was below the indicated detection limit

Table B-26. Groundwater Quality Data for Bores MB12-30S/D, RN023057, and RN023060, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB12-30D (Dry Season)																							
MB12-30D	21-Feb-13	6	13,130			186	227	11,300	<5	478	2,610	50	7	110	9940.0	1.0	8	876	2,440	794.00	3.10	22	1,780
MB12-30D	22-Apr-15	6	14,197			192	234	11,600	<5	449	2,870	27	5	54	5570.0	6.0	101	648	1,890	527.00	0.40	17	1,060
No. of samples		2	2	0	0	2	2	2	2	2	2	2	2	2	2	2.0	2	2	2	2	2	2	2
Minimum		6	13,130	0	0	186	227	11,300	0	449	2,610	27	5	54	5,570	1.0	8	648	1,890	527	0	17	1,060
Maximum		6	14,197	0	0	192	234	11,600	0	478	2,870	50	7	110	9,940	6.0	101	876	2,440	794	3	22	1,780
Mean		6	13,664			189	231	11,450		464	2,740	38	6	82	7,755	3.5	55	762	2,165	661	2	20	1,420
Standard Deviation		0	755			4	5	212		21	184	16	2	40	3,090	3.5	66	161	389	189	2	4	509
80th Percentile		6	13,984			191	233	11,540		472	2,818	45	6	99	9,066	5.0	82	830	2,330	741	3	21	1,636
MB12-30S (Wet Season)																							
MB12-30S	21-Feb-13	4	5,390		890			3,870	<5	195	677	2	4	48,800	183000.0	48.6	8,900	17,400	22,000	16300.00	22.60	393	39,500
MB12-30S	14-Feb-14	4	4,731		482		0	2,770	<5	269	458	2	3	22,600	74900.0	29.8	10,900	12,700	18,100	11000.00	20.80	167	15,200
MB12-30S	22-Apr-15	4	5,547		644		0	3,840	<5	276	669	3	1	38,000	145000.0	52.0	17,800	20,000	34,900	16000.00	5.80	480	29,100
MB12-30S	6-Apr-16	4	4,906		566			3,410	<5	248	581	3	2	25,800	134000.0	45.8	15,700	16,900	33,300	15600.00	13.00	387	26,500
MB12-30S	21-Mar-18	4	4,277	4	608		2,640	2,920	3	242	494	3	-	21,100	111000.0	42.8	14,700	15,800	27,900	12700.00	3.84	274	22,200
MB12-30S	23-Mar-17	4	3,193	4	468		1,820	2,020	2	199	322	2	3	12,000	73700.0	25.8	11,500	8,890	15,600	7390.00	1.80	225	12,900
No. of samples		6	6	2	6	0	4	6	6	6	6	6	6	6	6	6.0	6	6	6	6	6	6	6
Minimum		4	3,193	4	468	0	0	2,020	2	195	322	2	1	12,000	73,700	25.8	8,900	8,890	15,600	7,390	2	167	12,900
Maximum		4	5,547	4	890	0	2,640	3,870	3	276	677	3	4	48,800	183,000	52.0	17,800	20,000	34,900	16,300	23	480	39,500
Mean		4	4,674	4	610		1,115	3,138	2	238	534	3	3	28,050	120,267	40.8	13,250	15,282	25,300	13,165	11	321	24,233

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Standard Deviation		0	858	0	154		1,330	712	0	34	137	0	1	13,193	42,540	10.6	3,356	3,928	7,997	3,523	9	118	9,758
80th Percentile		4	5,390	4	644		2,148	3,840	3	269	669	3	3	38,000	145,000	48.6	15,700	17,400	33,300	16,000	21	393	29,100
MB12-30S (Dry Season)																							
MB12-30S	29-Nov-13	4	2504		1100																		
MB12-30S	29-Nov-16	4	899.6																				
MB12-30S	25-Oct-17	4	9297.9	4.1	1830		5970	7,090	3.4	114	1290	3	1.5	90,400	380000.0	114.0	18,400	35,100	39,500	34800.00	10.10	895	99,700
MB12-30S	28-Nov-18	4	8836	4			6040	6,940	6	104	1300	3	3.7	85,900	396000.0	104.0	17,100	35,100	42,500	33900.00	8.33	763	96,800
No. of samples		4	4	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum		4	900	4	1,100	0	5,970	6,940	3	104	1,290	3	2	85,900	380,000	104	17,100	35,100	39,500	33,900	8	763	96,800
Maximum		4	9,298	4	1,830	0	6,040	7,090	6	114	1,300	3	4	90,400	396,000	114	18,400	35,100	42,500	34,800	10	895	99,700
Mean		4	5,384	4	1,465		6,005	7,015	5	109	1,295	3	3	88,150	388,000	109	17,750	35,100	41,000	34,350	9	829	98,250
Standard Deviation		0	4,307	0	516		49	106	2	7	7	0	2	3,182	11,314	7	919	0	2,121	636	1	93	2,051
80th Percentile		4	9,021	4	1,684		6,026	7,060	5	112	1,298	3	3	89,500	392,800	112	18,140	35,100	41,900	34,620	10	869	99,120
RN023057 (Wet Season)																							
RN023057	6-Apr-09		4,702	4				3,280		179	655			8,070	40800.0		7,150	6,020	9,200	7130.00		218	4,640
RN023060 (Dry Season)																							
RN023060	30-Aug-11	7	1,494			162	198	596	5	104	131	8	2	9	126.0	<0.2	8	32	1,050	24.50	1.33	1	7
RN023060 (Wet Season)																							
RN023060	20-Apr-11	7	1,348	8		130	159	526	<5	90	116	8	2	20	400.0	<0.2	9	33	970	28.00	5.60	0	24
RN023060	28-Feb-12	6	1,317			120	146	525	<5	85	113	7	2	28	32.0	<0.2	7	37	760	44.70	<0.1	2	8
No. of samples		2	2	1	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum		6	1,317	8	0	120	146	525	0	85	113	7	2	20	32	0	7	33	760	28	6	0	8
Maximum		7	1,348	8	0	130	159	526	0	90	116	8	2	28	400	0	9	37	970	45	6	2	24
Mean		7	1,333	8		125	153	526		87	115	7	2	24	216		8	35	865	36	6	1	16
Standard Deviation		0	22			7	9	1		3	2	0	0	6	260		2	3	148	12		1	11
80th Percentile		7	1,342	8		128	156	526		89	115	7	2	26	326		9	36	928	41	6	2	21

Red numbers indicate that the concentration was below the indicated detection limit

Table B-27. Groundwater Quality Data for TPB Bores and RN023137, Near Browns Oxide Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
TPB1 (Wet Season)																							
TPB1	16-Mar-10		408	6.8		45	55	149	2	21	35	4	1	1	<20		48	6	15	51.30		0	32
TPB2 (Wet Season)																							
TPB2	16-Mar-10		2970	6.3		17	21	1,880	56	157	384	34	8	<1	<200		0	1	757	0.71		0	6
TPB3 (Wet Season)																							
TPB3	16-Mar-10		107	7.1		42	51	10	2	4	9	2	2	2	3320.0		0	1	248	1.48		0	2
RN023137 (Dry Season) note All Data after January 2010 for this site not EMU data																							
RN023137	21-May-08	6.4	309	6.6		66	80	70	1	27	18	6	3	2	<20	0.7	1	0	2	2.59	0.02	0	29
RN023137	17-Jun-08	6.5	297	6.8		57	70	65	1	26	18	6	3	1	<20	0.6	0	0	1	2.45	<0.01	0	6
RN023137	25-Jun-08	6.7	289	6.7		61	75	65	1	25	17	6	3	1	<20	0.6	0	0	1	2.30	<0.01	0	3
RN023137	28-Jul-08	6.7	290	6.8		59	72	63	1	24	17	6	3	14	<20	0.6	1	0	3	2.89	0.16	0	11
RN023137	29-Aug-08	6.9	301	6.9		61	75	56	1	25	17	6	3	1	<20	0.5	0	0	2	2.12	<0.01	0	2
RN023137	11-Nov-09	6.4	435	6.7		67	82	107	4	34	23	6	2	2	<20	1.6	1	1	104	5.24	<0.01	0	3
RN023137	16-Sep-09	6.6	437	7.1		70	85	111	3	33	24	7	3	8	<20	3.0	1	0	48	8.52	0.02	0	5
RN023137	30-Jul-09	6.8	419	7.4		62	76	118	4	34	23	7	3	16	<20	0.5	33	16	40	8.31	<0.01	0	5

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN023137	2-Oct-08	6.8	326	6.9		67	82	53	1	27	17	6	4	6	<20	0.5	0	0	2	1.57	0.06	0	4
RN023137	14-Oct-08	6.8	324	7.1		72	88	53	2	28	16	6	4	13	<20	0.8	1	0	4	2.21	0.12	0	5
RN023137	12-Nov-08	6.8	324	7.2		67	82	55	2	27	17	6	4	2	<20	1.1	0	0	17	4.38	0.02	0	4
RN023137	10-Dec-08	7.7	303	7.1		66	81	47	2	24	15	6	3	5	<20	0.8	1	0	19	3.62	0.06	0	4
RN23137	14-May-10	6.8	340	5.7				76	3	21	16	5	2	<10	80.0	0.5	6	19	69	19.00	<1	0	78
RN23137	28-Jun-10	7.3	318	7.2				70	3	23	16	7	2	<10	90.0	0.3	<1	1	2	2.00	<1	2	5
RN23137	21-Jul-10	7.3	332	7.0				69	3	26	18	6	2	<10	<50	0.3	2	<1	3	2.00	<1	2	5
RN23137	18-Aug-10	5.8	5830	6.3				213	3	57	536	24	3	9	<50	0.2	16	13	44	5.90	1.70	31	22
RN23137	17-Sep-10	6.8	394	7.0				75	3	33	21	7	3	<5	<50	0.6	3	<1	2	2.40	<1	2	6
RN23137	3-Nov-10	7.0	564	7.3				98	5	33	24	7	3	<5	<50	3.0	2	<1	140	9.80	<1	1	39
RN23137	12-May-11	6.1	358	5.8				22	2	21	16	5	2	<5	56.0	0.9	2	<1	9	2.60	<1	0	6
RN23137	3-Jun-11	6.0	415	6.5				34	3	27	21	6	3	<5	45.0	0.8	<1	<1	10	1.80	<1	0	14
RN23137	12-Jul-11	6.4	501	6.4				40	3	39	25	7	3	<5	<5	0.6	9	<1	5	2.00	<1	0	30
RN23137	9-Aug-11	6.4	521	6.4				45	4	39	26	7	3	<5	<5	0.7	10	<1	6	2.80	<1	0	36
RN23137	6-Sep-11	6.7	524	6.5				60	4	41	28	8	4	<5	<5	0.6	15	<1	3	3.60	<1	1	3
RN23137	11-Oct-11	6.6	509	6.6				45	4	39	27	7	3	<5	32.0	0.6	8	1	10	3.70	<1	0	36
RN23137	8-Nov-11	6.3	492	6.5				44	4	40	25	7	3	<5	51.0	1.1	8	<1	14	3.00	<1	0	35
RN23137	7-Dec-11	6.1	453	6.4				46	4	42	27	7	2	<5	9.6	5.8	6	<1	95	11.00	<1	1	35
RN23137	8-May-12	6.1	325	6.3				19	2	20	15	4	2	<5	11.0	1.1	<1	1	26	4.00	<1	<0.1	39
RN23137	5-Jun-12	6.4	292	6.7				19	2	20	15	5	2	9	16.0	0.4	<1	<1	20	2.00	<1	0	20
RN23137	3-Jul-12	6.5	310	6.7				20	2	24	17	5	2	10	3.0	0.3	5	1	8	1.00	<1	0	2
RN23137	7-Aug-12	6.7	328	6.8				27	3	25	17	5	2	<10	<50	0.4	4	<1	5	3.00	<1	0	21
RN23137	4-Sep-12	6.3	370	6.7				33	3	27	17	5	2	<5	<1	0.5	1	1	15	3.00	<1	1	31
RN23137	2-Oct-12	6.1	450	6.4				43	4	36	24	6	2	<5	<1	3.1	5	2	81	10.00	<1	1	48
RN23137	6-Nov-12	6.5	429	6.5				44	4	45	29	8	3	<5	<1	3.8	6	2	150	11.00	<1	1	41
RN23137	11-Dec-12	6.2	542	6.5				48	4	40	30	7	2	<5	2.0	2.1	6	3	580	11.00	<1	0	42
RN23137	7-May-13	6.4	506	6.5				40	4	42	25	6	2	<5	5.0	1.6	4	6	330	7.00	<1	2	28
RN23137	11-Jun-13	6.6	506	6.6				43	5	45	30	7	3	<5	<1	1.7	5	3	350	6.00	<1	1	24
RN23137	9-Jul-13	6.7	514	7.1				41	4	42	26	7	2	<5	<1	2.3	6	4	380	6.00	<1	1	27
RN23137	13-Aug-13	6.5	512	6.7				42	4	41	27	5	3	<5	<1	2.4	3	2	310	7.00	<1	1	25
RN23137	3-Sep-13	6.7	509	6.5				44	4	43	26	7	2	<5	<1	2.4	9	5	380	8.00	<1	3	29
RN23137	1-Oct-13	6.9	512	5.9				43	4	38	25	8	2	<5	6.0	0.1	<1	<1	<1	<1	<1	0	3
RN23137	25-Nov-13	7.0	505																				
RN23137	2-Dec-13	6.9	475																				
RN23137	6-May-14	6.9	515	6.7				44	5	35	25	7	6	<10	<50	1.4	9	12	460	10.00	<1	1	38
RN23137	4-Jun-14	6.5	533	6.4				45	3	45	26	7	2	<10	120.0	0.7	1	13	470	8.00	<1	1	7
RN23137	1-Jul-14	6.5	540	6.4				45	4	30	24	6	2	<10	<50	1.0	4	8	440	7.00	<1	1	11
RN23137	24-Aug-14	6.9	553	6.9				48	4	42	28	7	4	<10	<50	0.1	3	2	34	2.00	<1	0	<5
RN23137	29-Sep-14	6.5	535	6.7				44	4	34	22	5	3	<10	<50	0.2	5	4	30	2.00	<1	1	9
RN23137	20-Oct-14	6.4	532	6.3				44	3	39	25	6	2	<10	<50	0.5	9	6	130	3.00	<1	0	9
RN23137	13-Nov-14	6.4	517	6.2				42	4	43	27	7	3	<10	<50	0.2	4	2	12	<1	<1	0	<5
RN23137	1-Dec-14	6.7	554																				
No. of samples		50.0	50.0	50.0	0.0	12.0	12.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0
Minimum		5.8	288.9	5.7	0.0	57.4	70.0	19.0	1.3	20.0	14.8	4.4	1.5	1.0	2.0	0.1	0.1	0.1	1.0	1.0	0.0	0.0	2.0
Maximum		7.7	5830.0	7.4	0.0	72.1	88.0	213.0	5.4	57.4	536.0	23.7	6.4	15.6	120.0	5.8	32.6	19.0	580.0	19.0	1.7	31.0	78.0
Mean		6.6	539.4	6.6		64.8	79.0	55.7	3.1	33.4	32.9	6.6	2.7	6.5	37.6	1.1	5.1	3.8	105.8	5.1	0.3	1.2	19.6
Standard Deviation		0.3	769.2	0.4		4.4	5.4	32.2	1.0	8.6	75.1	2.7	0.9	5.1	37.6	1.1	5.8	5.0	160.9	3.7	0.6	4.5	16.9
80th Percentile		6.8	521.6	7.0		67.2	82.0	68.2	3.9	41.8	26.8	6.8	3.1	10.7	65.6	1.7	8.0	6.0	150.0	8.1	0.1	0.9	35.2
RN023137 (Wet Season)																							

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN023137	14-Jan-09	6.4	353	7.0		62	76	68	3	28	19	6	3	4	20.0	0.7	2	0	18	3.42	0.02	0	3
RN023137	3-Mar-09	7.6	385	7.1		64	78	84	3	29	21	7	3	5	20.0	2.4	10	4	76	10.40	0.06	0	9
RN023137	7-Apr-09	6.6	398	6.8		63	77	99	3	30	23	6	2	2	20.0	1.6	1	0	48	6.46	0.01	0	4
RN023137	10-Jun-09	6.7	430	6.9		63	77	120	4	37	23	7	3	3	20.0	0.4	3	2	10	1.76	0.05	0	2
RN023137	13-Jan-10	7.0	323	6.9		52	63	76	3	27	20	6	2	10	50.0	0.3	4	1	18	5.00	<1	0	15
RN23137	19-Mar-10	7.04	318.6	8.7				53	3	22.8	16.6	5.2	1.8	<10	<50	0.3	<1	<1	10	1.00	<1	0.2	13
RN23137	22-Apr-10	6.59	324.9	6.8				101	6	30.8	21.5	6.4	2.2	<10	<50	2.1	<10	5	238	13.00	<1	0.1	18
RN23137	21-Jan-11	6.22	450	6.9				37	<5	36	25	7	3.4	<5	<50	3.8	3	1.6	260	17.00	<1	0.3	47
RN23137	11-Feb-11	6.19	432	6.4				42	4.1	36	26	6.8	2.8	<5	<50	0.3	1.1	<1	9.4	1.20	<1	0.2	62
RN23137	15-Mar-11	6.02	362	6.4				25	2.6	27	20	6.1	2.1	8.6	<50	1.2	2.3	<1	12	2.70	<1	0.3	29
RN23137	8-Apr-11	6.21	352	6.5				21	2	26	18	5.8	1.9	<5	<50	1.5	3.1	<1	13	5.40	<1	<0.1	15
RN23137	17-Jan-12	6.31	443	6.7				41	3.6	35	28	6.3	1.8	<10	<50	2.5	6	<1	68	7.00	<1	0.93	7
RN23137	1-Feb-12	6.36	422	6.7				38	3.4	37	26	7	2.4	8	29.0	1.3	5	2	30	4.00	<1	0.7	5
RN23137	6-Mar-12	6.3	327	6.4				24	2.2	26	19	4.5	1.9	<5	9.0	0.4	<1	<1	12	2.00	<1	0.6	5
RN23137	10-Apr-12	6.08	314	6.5				20	2	23	15	4.4	1.4	<5	<1	0.5	<1	1	21	2.00	<1	0.2	28
RN23137	9-Jan-13	6.25	538	6.4				48	4	47	29	7.5	1.9	<5	4.0	1.7	6	3	400	8.00	<1	0.4	30
RN23137	5-Feb-13	6.37	521	6.4				43	3.8	40	25	6.8	1.7	<5	2.0	2.0	5	4	340	8.00	<1	0.9	40
RN23137	5-Mar-13	6.45	502	6.5				42	3.5	45	27	6.9	1.8	<5	2.0	1.7	4	3	310	7.00	<1	0.6	36
RN23137	9-Apr-13	6.44	520	6.6				42	3.9	37	23	6.1	1.7	<5	1.0	1.5	2	3	290	5.00	<1	0.5	36
RN23137	21-Jan-14	7.02	541	7.6				43	4.2	39	25	5	3.3	<5	<10	1.0	3	15	480	1.00	<1	6	18
RN23137	20-Feb-14	6.54	508	6.4				45	3.5	52	33	7.8	2.5	20	<50	2.1	2	5	380	4.00	<1	1	7
RN23137	11-Mar-14	6.6	468	6.5				38	3.5	42	26	6.4	2.2	<10	<50	1.4	3	4	280	4.00	<1	1	14
RN23137	2-Apr-14	5.66	520	6				42	3.9	37	24	6.3	3.8	<10	<50	1.2	5	1	170	4.00	<1	1	25
RN23137	14-Jan-15	6.38	547	6.5				37	3.7	36	27	6.9	3.1	<10	<50	2.0	5	4	84	4.00	<1	0.48	15
No. of samples		24	24	24	0	5	5	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Minimum		5.7	314.0	6.0	0.0	51.6	63.0	20.0	2.0	22.8	15.0	4.4	1.4	1.6	1.0	0.3	0.6	0.2	9.4	1.0	0.0	0.0	2.2
Maximum		7.6	547.0	8.7	0.0	63.9	78.0	120.0	6.0	52.0	33.0	7.8	3.8	20.0	50.0	3.8	10.1	15.0	480.0	17.0	0.1	6.1	62.0
Mean		6.5	429.1	6.7		60.8	74.2	51.2	3.4	34.4	23.3	6.3	2.4	7.6	16.1	1.4	3.8	3.3	149.0	5.3	0.0	0.7	20.1
Standard Deviation		0.402651	81.8662163	0.528054		5.164584919	6.300794	26.47835	0.865843	7.650707	4.284646	0.842604	0.656241	5.783582	14.82872	0.858323	2.161238	3.312141	154.8785	3.906131	0.023805	1.207927	15.66953
80th Percentile		6.644	520	6.9		63.27868852	77.2	71.02	3.9	39.4	26.4	6.9	2.98	9.44	20	2.04	5	4	298	7.4	0.054	0.66	32.4

Red numbers indicate that the concentration was below the indicated detection limit

Table B-28. Groundwater Quality Data for Bore MB10-5, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-5 (Dry Season)																							
MB10-5	30-Nov-10	6.6	1358					463	<5	55	106	8	2	53	<200	1.0	19	997	2,850	749.00	7.50	15	800
MB10-5	30-Aug-11	6.9	598			162	198	82	<5	30	41	6	2	28	<2	<0.02	13	11	76	13.00	0.06	11	2
MB10-5	13-Nov-14	7.1	762			154	151	212	5	45	61	8	2	32	54.0	<0.02	1	9	84	4.81	0.10	3	16
MB10-5	27-Sep-12	6.9	764			160	195	154	<5	40	52	8	2	5	44.0	<0.02	0	6	60	6.24	0.08	1	3
No. of samples		4	4	0	0	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Minimum		6.6	598.0	0.0	0.0	154.0	151.0	81.5	5.0	30.1	41.2	6.1	1.8	5.4	44.0	1.0	0.2	6.0	59.6	4.8	0.1	1.3	2.3
Maximum		7.1	1358.0	0.0	0.0	162.0	197.6	463.0	5.0	54.9	106.0	8.1	2.1	53.0	54.0	1.0	18.7	997.0	2850.0	749.0	7.5	14.9	800.0
Mean		6.9	870.5			158.7	181.3	227.6	5.0	42.4	65.1	7.4	2.0	29.4	49.0	1.0	8.0	255.6	767.3	193.3	1.9	7.7	205.4
Standard Deviation		0.217715	334.179094			4.163331999	26.25161	165.7495		10.37091	28.4808	0.90185	0.125831	19.50248	7.071068		9.137959	494.2393	1388.504	370.5089	3.710036	6.400253	396.4321
80th Percentile		6.988	1001.6			161.2	196.664	312.4	5	49.02	79.12	7.98	2.04	40.16	52	1	15.04	405.4	1190.4	307.4	3.06	12.62	329.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-5 (Wet Season)																							
MB10-5	25-Feb-11		6.7	1697					776	<5	127	152	7	7	25	<200	0.2	2	580	1,790	481.00	0.80	9	376
MB10-5	14-Feb-12		6.9	786			140	171	134	<5	41	52	7	2	16	48.0	0.1	2	13	99	15.70	0.17	4	8
MB10-5	20-Feb-13		6.8	825			142	173	181	5	45	54	7	2	30	160.0	0.1	0	8	54	10.80	0.09	3	4
MB10-5	13-Feb-14		6.6	1221			98	120	426	<5	85	84	4	1	42	16.0	0.1	36	21	122	34.10	0.62	3	32
MB10-5	23-Apr-15		6.9	838			130	159	218	5	48	62	8	2	26	4.0	0.0	1	5	48	5.13	0.48	2	5
No. of samples			5.0	5.0	0.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum			6.6	786.0	0.0	0.0	98.0	119.6	134.0	5.0	40.8	52.1	3.7	1.2	16.3	4.0	0.0	0.4	5.5	47.9	5.1	0.1	2.2	3.8
Maximum			6.9	1697.0	0.0	0.0	142.0	173.2	776.0	5.0	127.0	152.0	7.9	6.7	41.9	160.0	0.2	36.1	580.0	1790.0	481.0	0.8	8.6	376.0
Mean			6.8	1073.4			127.5	155.6	347.0	5.0	68.9	80.7	6.6	2.8	27.8	57.0	0.1	8.2	125.5	422.7	109.3	0.4	4.0	85.1
Standard Deviation			0.1	390.7			20.4	24.8	264.5	0.0	37.0	41.8	1.7	2.2	9.3	71.1	0.1	15.6	254.1	765.0	208.0	0.3	2.6	163.1
80th Percentile			6.9	1316.2			140.8	171.8	496.0	5.0	93.3	97.3	7.5	2.9	32.4	92.8	0.1	9.1	133.0	455.6	123.5	0.7	4.7	101.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-29. Groundwater Quality Data for Bore MB10-6, Near the Intermediate WRD

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-6 (Dry Season)																							
MB10-6	30-Nov-10	7.2	1952					931	10	232	126	12	5	19	<200	<0.2	3	1	577	0.90	30.70		
MB10-6	30-Aug-11	7.2	2309			158	193	1,130	10	282	146	11	5	15	<20	<0.2	<0.1	1	649	<0.1	27.50	1	<1
MB10-6	31-Oct-14	7.1	2085			158	193	1,090	10	281	145	12	5	34	30.0	<0.2	0	1	601	1.14	17.50	2	3
MB10-6	27-Sep-12	7.2	2195			89	109	977	10	254	131	12	5	10	42.0	<0.1	0	1	488	1.69	27.00	1	2
No. of samples		4.0	4.0	0.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
Minimum		7.1	1952.0	0.0	0.0	89.0	108.6	931.0	10.0	232.0	126.0	10.9	4.9	10.3	30.0	0.0	0.1	0.8	488.0	0.9	17.5	0.7	1.8
Maximum		7.2	2309.0	0.0	0.0	158.0	192.8	1130.0	10.0	282.0	146.0	12.3	5.2	34.0	42.0	0.0	2.7	1.2	649.0	1.7	30.7	1.9	3.2
Mean		7.2	2135.3			135.0	164.7	1032.0	10.0	262.3	137.0	11.8	5.1	19.7	36.0		1.0	1.0	578.8	1.2	25.7	1.3	2.5
Standard Deviation		0.0	152.6			39.8	48.6	93.4	0.0	24.0	10.0	0.6	0.1	10.2	8.5		1.5	0.2	67.5	0.4	5.7	0.6	1.0
80th Percentile		7.2	2240.6			158.0	192.8	1106.0	10.0	281.4	145.4	12.2	5.1	25.0	39.6		1.7	1.1	620.2	1.5	28.8	1.6	2.9
MB10-6 (Wet Season)																							
MB10-6	14-Feb-12	7.2	2569			152	185	1,150	10	291	149	12	5	14	<20	<0.2	<0.1	1	601	0.13	46.20	1	4
MB10-6	19-Apr-11	7.2	2243	7.9		144	176	1,090	10	268	141	12	5	12	<200	<0.2	0	1	742	3.90	11.90	1	1
MB10-6	20-Feb-13	7.2	2205			157	192	980	10	254	131	12	5	24	18.0	<0.1	0	1	505	2.58	26.40	1	3
MB10-6	20-Feb-13	7.2	2205			157	192	988	10	256	132	12	5	25	22.0	<0.1	0	1	498	1.60	20.10	1	3
MB10-6	14-Feb-14	7.2	2400			179	218	1,030	10	268	138	12	5	41	<10	<0.1	1	1	575	1.38	20.10	2	7
MB10-6	23-Apr-15	7.2	2269			170	207	1,030	10	271	141	12	5	23	12.0	<0.1	0	1	570	0.39	24.40	1	2
No. of samples		6.0	6.0	1.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum		7.2	2205.0	7.9	0.0	144.0	175.7	980.0	10.0	254.0	131.0	11.6	4.5	12.0	12.0	0.0	0.2	0.7	498.0	0.1	11.9	0.5	1.0
Maximum		7.2	2569.0	7.9	0.0	179.0	218.4	1150.0	10.0	291.0	149.0	12.3	5.1	40.8	22.0	0.0	1.0	1.2	742.0	3.9	46.2	2.2	6.9
Mean		7.2	2315.1	7.9		159.8	195.0	1044.7	10.0	268.0	138.7	11.9	4.8	23.2	17.3		0.4	1.0	581.8	1.7	24.9	1.2	3.4
Standard Deviation		0.0	143.7			12.6	15.4	64.8	0.0	13.3	6.7	0.2	0.2	10.2	5.0		0.3	0.2	88.5	1.4	11.6	0.5	2.0
80th Percentile		7.2	2400.0	7.9		170.0	207.4	1090.0	10.0	271.0	141.0	11.9	4.9	25.4	20.4		0.4	1.2	601.0	2.6	26.4	1.4	4.4

Red numbers indicate that the concentration was below the indicated detection limit

Table B-30. Groundwater Quality Data for Bore MB10-10, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

		EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic														300.0		1000		100				3000
ADWG 2015 Health															2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%													150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%													80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%													55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation													5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water		4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-10 (Dry Season)																							
MB10-10	16-Dec-10	6.7	969			379	463	71	<5	10	113	4	1	19	2000.0	<0.2	1	131	51	30.50	2.80	15	13
MB10-10	31-Aug-11	6.6	2,126			373	455	659	5	53	222	19	1	7	122.0	<0.2	66	202	250	67.40	<0.1	124	27
MB10-10	11-Oct-12	6.7	1,976			398	486	713	10	55	240	20	1	7	1750.0	0.0	1	167	183	30.10	0.21	148	7
MB10-10	3-Oct-13	6.7	2,128			382	466	658	5	50	222	22	1	15	1940.0	<0.1	0	112	238	17.10	0.06	100	12
MB10-10	21-Oct-14	6.6	1,881			528	644	756	10	57	260	19	1	10	1800.0	<0.02	6	111	220	18.90	0.02	85	2
No. of samples		5.0	5.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.6	969.0	0.0	0.0	373.0	455.1	71.3	5.0	10.2	113.0	4.1	1.1	7.1	122.0	0.0	0.4	111.0	51.2	17.1	0.0	15.3	2.3
Maximum		6.7	2128.0	0.0	0.0	528.0	644.2	756.0	10.0	57.3	260.0	21.8	1.3	19.0	2000.0	0.0	66.2	202.0	250.0	67.4	2.8	148.0	27.2
Mean		6.7	1816.0			412.1	502.7	571.5	7.5	45.2	211.4	16.5	1.2	11.8	1522.4	0.0	14.7	144.6	188.4	32.8	0.8	94.4	12.1
Standard Deviation		0.1	484.9			65.5	79.9	282.6	2.9	19.8	57.2	7.1	0.1	5.3	789.4		28.9	39.3	80.8	20.3	1.4	50.3	9.4
80th Percentile		6.7	2126.4			424.0	517.3	721.6	10.0	55.8	244.0	20.0	1.2	16.1	1952.0	0.0	17.6	174.0	240.4	37.9	1.2	128.8	15.8
MB10-10 (Wet Season)																							
MB10-10	10-Feb-11	6.8	1,748			379	463	392	5	31	180	15	1	27	2000.0	<0.8	3	94	117	19.20	0.40	111	8
MB10-10	13-Mar-12	6.7	1,885			382	466	527	5	42	205	26	1	14	1470.0	<0.2	0	152	186	27.10	<0.1	94	3
MB10-10	13-Feb-13	6.7	1,904			376	459	535	5	38	210	15	1	32	590.0	0.2	110	137	291	66.90	0.21	33	22
MB10-10	12-Feb-14	6.7	2,071			380	464	756	5	59	245	22	1	49	1800.0	<0.1	1	83	247	14.60	0.23	90	15
No. of samples		4.0	4.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.7	1748.0	0.0	0.0	376.0	458.7	392.0	5.0	31.3	180.0	15.3	1.2	13.6	590.0	0.2	0.4	83.3	117.0	14.6	0.2	32.9	2.7
Maximum		6.8	2071.0	0.0	0.0	382.0	466.0	756.0	5.0	58.7	245.0	26.2	1.3	49.1	2000.0	0.2	110.0	152.0	291.0	66.9	0.4	111.0	21.7
Mean		6.7	1902.0			379.3	462.8	552.5	5.0	42.6	210.0	19.7	1.3	30.3	1465.0	0.2	28.7	116.6	210.3	32.0	0.3	81.9	11.7
Standard Deviation		0.1	132.4			2.5	3.0	150.7	0.0	11.7	26.8	5.4	0.1	14.7	622.9		54.2	33.1	75.6	23.9	0.1	33.9	8.2
80th Percentile		6.7	1970.8			380.8	464.6	623.4	5.0	48.9	224.0	23.7	1.3	38.5	1880.0	0.2	46.0	143.0	264.6	43.0	0.3	100.8	17.4

Red numbers indicate that the concentration was below the indicated detection limit

Table B-31. Groundwater Quality Data for Bore MB10-11, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-11 (Dry Season)																							
MB10-11	17-Dec-10	5.0	7,540			0	0	5,600	55	401	961	20	3	1,240	36300.0	11.4	137,000	75,900	195,000	50900.00		10	9,190
MB10-11	18-Oct-12	5.4	7,970			72	88	5,930	55	478	1,060	31	3	419	9390.0	12.4	67,600	66,600	176,000	50900.00	11.50	14	8,480
MB10-11	31-Aug-11	5.1	8,270			78	95	5,970	25	470	1,050	27	2	85	13300.0	14.8	75,600	72,800	199,000	57800.00	3.12	5	11,700
MB10-11	3-Oct-13	5.4	7,270			64	78	5,370	70	400	995	33	2	490	1950.0	10.4	69,200	55,200	145,000	45600.00	2.50	27	7,680
MB10-11	21-Oct-14	5.4	6,150			65	80	5,180	50	426	951	31	2	428	1490.0	10.2	77,200	51,100	144,000	42700.00	<1	24	6,870
No. of samples		5.0	5.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Minimum		5.0	6150.0	0.0	0.0	0.0	0.0	5180.0	25.0	400.0	951.0	19.6	1.7	84.8	1490.0	10.2	67600.0	51100.0	144000.0	42700.0	2.5	4.8	6870.0
Maximum		5.4	8270.0	0.0	0.0	78.0	95.2	5970.0	70.0	478.0	1060.0	32.9	2.8	1240.0	36300.0	14.8	137000.0	75900.0	199000.0	57800.0	11.5	27.2	11700.0
Mean		5.3	7440.0			55.8	68.1	5610.0	51.0	435.0	1003.4	28.4	2.2	532.4	12486.0	11.8	85320.0	64320.0	171800.0	49580.0	5.7	15.9	8784.0
Standard Deviation		0.2	817.4			31.7	38.7	344.5	16.4	37.2	50.0	5.3	0.5	426.2	14223.9	1.9	29176.6	10829.9	26395.1	5792.8	5.0	9.5	1846.8
80th Percentile		5.4	8030.0			73.2	89.3	5938.0	58.0	471.6	1052.0	31.6	2.6	640.0	17900.0	12.9	89160.0	73420.0	195800.0	52280.0	8.1	24.7	9692.0
MB10-11 (Wet Season)																							
MB10-11	10-Feb-11	5.3	7,800			0	0	5,570	55	444	985	32	3	270	17000.0	12.8	86,500	66,700	191,000	49000.00	0.80	4	9,550
MB10-11	13-Mar-12	5.3	7,500			166	203	5,960	55	489	1,070	31	2	154	62900.0	8.7	9,220	63,200	192,000	41200.00	2.70	9	7,020

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-11	13-Feb-13	5.7	7,520			160	195	5,460	55	398	1,080	36	2	176	58800.0	4.4	8,860	33,300	115,000	26700.00	0.98	15	3,210
MB10-11	13-Feb-14	5.5	7,680			107	130	5,320	45	387	1,060	32	2	532	3360.0	7.0	36,300	49,900	120,000	40200.00	2.35	18	5,400
No. of samples		4.0	4.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.3	7500.0	0.0	0.0	0.0	0.0	5320.0	45.0	387.0	985.0	30.8	1.6	154.0	3360.0	4.4	8860.0	33300.0	115000.0	26700.0	0.8	3.9	3210.0
Maximum		5.7	7800.0	0.0	0.0	166.0	202.5	5960.0	55.0	489.0	1080.0	35.9	2.8	532.0	62900.0	12.8	86500.0	66700.0	192000.0	49000.0	2.7	18.1	9550.0
Mean		5.5	7625.0			108.1	131.9	5577.5	52.5	429.5	1048.8	32.7	2.0	283.0	35515.0	8.2	35220.0	53275.0	154500.0	39275.0	1.7	11.5	6295.0
Standard Deviation		0.2	141.8			76.9	93.8	274.8	5.0	46.7	43.3	2.2	0.6	173.5	29826.6	3.5	36522.4	15156.2	42774.6	9260.4	1.0	6.3	2673.3
80th Percentile		5.6	7728.0			162.4	198.1	5726.0	55.0	462.0	1074.0	33.6	2.3	374.8	60440.0	10.3	56380.0	64600.0	191400.0	44320.0	2.5	16.1	8032.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-32. Groundwater Quality Data for Bore PB12-33, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
PB12-33 (Dry Season)																							
PB12-33	22-Nov-12	4.7	5,440					5,480	25	392	918	29	2	8,190	6880.0	12.0	225,000	63,900	176,000	51500.00	5.11	99	8,900
PB12-33	22-Nov-12	4.9	6,740					4,920	30	370	829	33	2	6,070	1090.0	10.4	195,000	54,200	145,000	42300.00	<1	109	6,930
PB12-33	21-Oct-14	5.4	5,600			31	37	4,580	40	337	892	24	2	243	946.0	6.7	63,200	40,200	85,100	25700.00	1.41	5	4,920
PB12-33	8-Oct-13	5.5	6,890			80	98	4,620	45	356	890	26	3	155	7540.0	6.2	38,500	35,900	90,100	24000.00	<1	5	3,810
No. of samples		4.0	4.0	0.0	0.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		4.7	5440.0	0.0	0.0	30.6	37.3	4580.0	25.0	337.0	829.0	23.6	1.8	155.0	946.0	6.2	38500.0	35900.0	85100.0	24000.0	1.4	4.8	3810.0
Maximum		5.5	6890.0	0.0	0.0	80.0	97.6	5480.0	45.0	392.0	918.0	32.5	2.8	8190.0	7540.0	12.0	225000.0	63900.0	176000.0	51500.0	5.1	109.0	8900.0
Mean		5.1	6167.5			55.3	67.5	4900.0	35.0	363.8	882.3	27.9	2.2	3664.5	4114.0	8.8	130425.0	48550.0	124050.0	35875.0	3.3	54.5	6140.0
Standard Deviation		0.4	753.0			34.9	42.6	415.4	9.1	23.2	37.7	3.9	0.4	4094.3	3585.6	2.8	93244.8	12874.9	43997.8	13291.2	2.6	57.2	2247.9
80th Percentile		5.4	6800.0			70.1	85.5	5144.0	42.0	378.8	902.4	30.6	2.4	6918.0	7144.0	11.0	207000.0	58080.0	157400.0	45980.0	4.4	102.9	7718.0
PB12-33 (Wet Season)																							
PB12-33	21-Feb-14	5.3	6,680			55	68	4,620	35	309	871	23	3	981	2810.0	<20	135,000	54,000	98,600	36400.00	<10	4	7,740
PB12-33	27-Feb-13	5.4	6,450			70	85	4,670	40	337	867	24	2	339	<200	12.0	138,000	61,200	115,000	41800.00	4.13	11	8,580
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		5.3	6450.0	0.0	0.0	55.4	67.6	4620.0	35.0	309.0	867.0	22.8	2.3	339.0	2810.0	12.0	135000.0	54000.0	98600.0	36400.0	4.1	4.1	7740.0
Maximum		5.4	6680.0	0.0	0.0	70.0	85.4	4670.0	40.0	337.0	871.0	24.4	2.7	981.0	2810.0	12.0	138000.0	61200.0	115000.0	41800.0	4.1	10.7	8580.0
Mean		5.4	6565.0			62.7	76.5	4645.0	37.5	323.0	869.0	23.6	2.5	660.0	2810.0	12.0	136500.0	57600.0	106800.0	39100.0	4.1	7.4	8160.0
Standard Deviation		0.1	162.6			10.3	12.6	35.4	3.5	19.8	2.8	1.1	0.3	454.0			2121.3	5091.2	11596.6	3818.4		4.7	594.0
80th Percentile		5.4	6634.0			67.1	81.8	4660.0	39.0	331.4	870.2	24.1	2.6	852.6	2810.0	12.0	137400.0	59760.0	111720.0	40720.0	4.1	9.4	8412.0
RN023054 (Wet Season)																							
RN023054	6-Apr-09	3.3	2,760					1,650		163	250			21,000	400.0	11.4	17,800	3,340	10,900	2920.00	83.90	590	3,430

Red numbers indicate that the concentration was below the indicated detection limit

Table B-33. Groundwater Quality Data for MB10-22, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-22 (Dry Season)																							
MB10-22	23-Dec-10	7.7	2021			0	0	944	30	89	222	17	1	25	400.0	<0.2	1	3	495	2.90	0.80	5	5
MB10-22	10-Oct-12	7.5	1458			121	148	523	20	52	139	10	2	18	20.0	<0.02	4	1	102	0.88	0.02	6	2

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-22	30-Aug-11	7.5	1491			103	126	617	25	58	156	10	2	59	34.0	<0.2	<0.1	1	186	<0.1	<0.1	5	<1
MB10-22	3-Oct-13	7.7	1619			130	159	627	5	57	161	11	1	34	496.0	<0.02	1	2	402	0.92	0.08	7	4
No. of samples		4.0	4.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.5	1458.0	0.0	0.0	0.0	0.0	523.0	5.0	51.8	139.0	9.6	1.3	17.6	20.0	0.0	0.9	0.5	102.0	0.9	0.0	5.1	1.6
Maximum		7.7	2021.0	0.0	0.0	130.0	158.6	944.0	30.0	88.7	222.0	17.0	1.5	59.3	496.0	0.0	3.9	2.5	495.0	2.9	0.8	7.5	5.0
Mean		7.6	1647.3			88.5	108.0	677.8	20.0	64.0	169.5	11.8	1.4	33.9	237.5		2.1	1.3	296.3	1.6	0.3	6.0	3.6
Standard Deviation		0.1	258.7			60.1	73.3	183.6	10.8	16.7	36.2	3.5	0.1	18.2	246.3		1.6	1.0	183.1	1.2	0.4	1.1	1.8
80th Percentile		7.7	1779.8			124.6	152.0	753.8	27.0	70.4	185.4	13.4	1.5	43.9	438.4		2.9	2.0	439.2	2.1	0.5	6.5	4.6
MB10-22 (Wet Season)																							
MB10-22	24-Feb-11	7.3	1907			0	0	804	30	73	196	15	2	24	400.0	<0.2	0	2	530	2.50	0.30	12	5
MB10-22	27-Feb-12	7.4	1492			138	168	621	25	60	161	11	2	44	164.0	<0.2	1	1	368	1.11	<0.1	39	1
MB10-22	27-Feb-12	7.4	1492			138	168	619	25	60	161	11	2	44	172.0	<0.2	1	1	360	0.96	<0.1	32	2
MB10-22	12-Feb-13	7.5	2065			162	198	1,040	35	99	248	17	1	25	60.0	<0.1	3	3	228	25.10	0.08	9	12
MB10-22	4-Feb-14	7.8	1877			168	205	782	30	72	201	13	2	85	140.0	<0.1	16	2	401	3.90	0.58	4	109
MB10-22	22-Apr-15	7.8	1961			14	18	805	30	75	209	13	1	114	176.0	<0.1	0	1	421	1.23	0.05	9	2
No. of samples		6.0	6.0	0.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum		7.3	1492.0	0.0	0.0	0.0	0.0	619.0	25.0	60.3	161.0	11.2	0.8	24.0	60.0	0.0	0.4	1.1	228.0	1.0	0.1	4.4	1.1
Maximum		7.8	2065.0	0.0	0.0	168.0	205.0	1040.0	35.0	99.2	248.0	16.9	1.7	114.0	400.0	0.0	16.4	2.7	530.0	25.1	0.6	38.6	109.0
Mean		7.5	1798.9			103.4	126.1	778.5	29.2	73.3	196.0	13.4	1.4	56.0	185.3		3.7	1.7	384.7	5.8	0.3	17.4	21.8
Standard Deviation		0.2	246.2			75.6	92.3	154.9	3.8	14.2	32.7	2.1	0.3	36.0	113.6		6.3	0.6	98.1	9.5	0.2	14.2	42.9
80th Percentile		7.8	1960.5			162.0	197.6	805.0	30.0	74.8	209.0	14.5	1.6	85.0	176.0		3.1	2.4	421.0	3.9	0.4	32.1	12.1

Red numbers indicate that the concentration was below the indicated detection limit

Table B-34. Groundwater Quality Data for MB10-23, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-23 (Dry Season)																							
MB10-23	23-Dec-10	3.5	6940			0	0	5,190	40	281	768	22	5	37,700	13000.0	18.0	506,000	73,700	143,000	56400.00	50.30	404	10,500
MB10-23	10-Oct-13	3.9	6540		4450	0	0	4,670	30	228	666	18	7	10,200	29200.0	<20	488,000	57,500	122,000	43000.00	<10	110	7,890
MB10-23	31-Aug-11	3.6	7120		1556	0	0	5,320	20	266	772	19	5	27,800	20500.0	18.6	635,000	71,000	160,000	58100.00	48.90	325	10,600
MB10-23	20-Oct-14	4.1	4852			3	4	3,810	25	194	519	14	6	7,130	37400.0	15.8	561,000	50,300	124,000	39900.00	13.50	109	7,190
MB10-23	10-Oct-12	3.9	6980		1454	0	0	5,060	20	246	718	19	7	15,700	34200.0	16.4	661,000	71,200	155,000	53800.00	13.00	198	9,820
No. of samples		5.0	5.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		3.5	4852.0	0.0	1454.0	0.0	0.0	3810.0	20.0	194.0	519.0	13.9	4.8	7130.0	13000.0	15.8	488000.0	50300.0	122000.0	39900.0	13.0	109.0	7190.0
Maximum		4.1	7120.0	0.0	4450.0	3.0	3.7	5320.0	40.0	281.0	772.0	22.0	6.7	37700.0	37400.0	18.6	661000.0	73700.0	160000.0	58100.0	50.3	404.0	10600.0
Mean		3.8	6486.4		2486.7	0.6	0.7	4810.0	27.0	243.0	688.6	18.2	5.9	19706.0	26860.0	17.2	570200.0	64740.0	140800.0	50240.0	31.4	229.2	9200.0
Standard Deviation		0.3	938.7		1701.1	1.3	1.6	609.6	8.4	33.9	104.2	2.9	0.9	12785.4	10037.3	1.3	76496.4	10272.9	17398.3	8242.1	21.0	131.7	1564.5
80th Percentile		4.0	7008.0		3292.4	0.6	0.7	5216.0	32.0	269.0	768.8	19.5	6.6	29780.0	34840.0	18.2	640200.0	71700.0	156000.0	56740.0	49.5	340.8	10520.0
MB10-23 (Wet Season)																							
MB10-23	10-Feb-11	3.5	7200			0	0	5,290	20	273	773	38	5	35,900	19800.0	21.0	587,000	71,300	152,000	57600.00	22.00	371	11,900
MB10-23	28-Feb-12	3.9	9510		1950	0	0	7,670	20	339	1,150	30	6	29,400	47700.0	25.6	857,000	120,000	237,000	92600.00	9.30	222	17,000
MB10-23	13-Feb-13	4.0	8800		1368	0	0	7,320	50	336	1,120	29	7	20,500	33200.0	24.6	758,000	109,000	220,000	83000.00	60.20	164	15,500
MB10-23	6-Feb-14	4.0	6190		1252	0	0	4,630	20	224	655	19	6	14,800	38200.0	21.2	651,000	69,600	153,000	52700.00	24.70	173	9,950
MB10-23	24-Apr-15	4.0	7876		1360		0	3,510	5	29	49	5	1	16,900	36500.0	20.4	785,000	84,700	178,000	63500.00	17.80	203	12,000

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic													300.0		1000		100				3000
ADWG 2015 Health														2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%												150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%												80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%												55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation												5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500											5000		10.0	400	1000		1000.00	100.00	200	20000
No. of samples		5.0	5.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		3.5	6190.0	0.0	1252.0	0.0	0.0	3510.0	5.0	28.6	48.9	4.8	1.4	14800.0	19800.0	20.4	587000.0	69600.0	152000.0	52700.0	9.3	164.0	9950.0
Maximum		4.0	9510.0	0.0	1950.0	0.0	0.0	7670.0	50.0	339.0	1150.0	37.9	6.7	35900.0	47700.0	25.6	857000.0	120000.0	237000.0	92600.0	60.2	371.0	17000.0
Mean		3.9	7915.2		1482.5	0.0	0.0	5684.0	23.0	240.1	749.4	24.1	5.1	23500.0	35080.0	22.6	727600.0	90920.0	188000.0	69880.0	26.8	226.6	13270.0
Standard Deviation		0.2	1305.3		316.1	0.0	0.0	1775.7	16.4	127.5	446.7	12.8	2.2	8899.7	10099.9	2.4	107934.2	22642.4	38878.0	17139.0	19.6	84.0	2889.6
80th Percentile		4.0	8942.0		1600.8	0.0	0.0	7390.0	26.0	336.6	1126.0	31.5	6.4	30700.0	40100.0	24.8	799400.0	111200.0	223400.0	84920.0	31.8	251.8	15800.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-35. Groundwater Quality Data for Bore MB10-24, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-24 (Dry Season)																							
MB10-24	30-Aug-11	2.8	2124		472																		
MB10-24	10-Oct-12	3.5	2208		398	0	0	1,210	5	91	163	7	2	34,400	770.0	3.9	52,100	5,370	19,300	5120.00	45.20	260	1,390
MB10-24	10-Oct-13	3.4	1878		324	0	0	938	10	70	129	8	2	26,200	1430.0	5.1	41,800	4,110	15,800	3910.00	37.00	199	1,130
MB10-24	23-Oct-14	3.5	1801		290	0	0	1,050	10	82	147	8	2	24,300	560.0	4.4	52,600	5,180	18,300	5110.00	15.40	162	1,370
No. of samples		4.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		2.8	1801.2	0.0	290.0	0.0	0.0	938.0	5.0	69.5	129.0	7.0	1.9	24300.0	560.0	3.9	41800.0	4110.0	15800.0	3910.0	15.4	162.0	1130.0
Maximum		3.5	2208.0	0.0	472.0	0.0	0.0	1210.0	10.0	91.2	163.0	8.4	2.3	34400.0	1430.0	5.1	52600.0	5370.0	19300.0	5120.0	45.2	260.0	1390.0
Mean		3.3	2002.8		371.0	0.0	0.0	1066.0	8.3	80.8	146.3	7.8	2.1	28300.0	920.0	4.5	48833.3	4886.7	17800.0	4713.3	32.5	207.0	1296.7
Standard Deviation		0.3	194.1		81.0	0.0	0.0	136.7	2.9	10.9	17.0	0.7	0.2	5367.5	454.0	0.6	6096.2	679.3	1802.8	695.7	15.4	49.5	144.7
80th Percentile		3.5	2157.6		427.6	0.0	0.0	1146.0	10.0	87.4	156.6	8.3	2.2	31120.0	1166.0	4.8	52400.0	5294.0	18900.0	5116.0	41.9	235.6	1382.0
MB10-24 (Wet Season)																							
MB10-24	9-Feb-11	3.1	1367			0	0	600		44	81	5	2	17,900	<800	1.8	28,000	3,080	11,600	2890.00		139	903
MB10-24	13-Feb-13	3.4	1828		358	0	0	914	5	67	123	6	2	25,400	524.0	3.2	38,300	3,910	14,800	3800.00	56.40	209	1,080
MB10-24	5-Feb-14	3.5	1260		164																		
MB10-24	24-Apr-15	3.6	890		208	0	0	5,620	40	268	830	22	6	7,780	262.0	1.4	17,300	1,340	5,190	1300.00	25.20	142	415
MB10-24	28-Feb-12	3.4	1617		335	0	0	750	<5	57	103	5	2	20,300	514.0	2.4	32,100	3,230	12,500	3060.00	23.10	160	899
No. of samples		5.0	5.0	0.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Minimum		3.1	889.7	0.0	164.0	0.0	0.0	600.0	5.0	44.3	81.1	4.7	1.6	7780.0	262.0	1.4	17300.0	1340.0	5190.0	1300.0	23.1	139.0	415.0
Maximum		3.6	1828.0	0.0	358.0	0.0	0.0	5620.0	40.0	268.0	830.0	21.9	6.4	25400.0	524.0	3.2	38300.0	3910.0	14800.0	3800.0	56.4	209.0	1080.0
Mean		3.4	1392.3		266.3	0.0	0.0	1971.0	22.5	108.9	284.3	9.5	2.9	17845.0	433.3	2.2	28925.0	2890.0	11022.5	2762.5	34.9	162.5	824.3
Standard Deviation		0.2	357.4		94.9	0.0	0.0	2436.0	24.7	106.5	364.2	8.3	2.4	7403.0	148.5	0.8	8831.1	1094.6	4115.2	1052.0	18.6	32.4	285.6
80th Percentile		3.5	1659.2		344.2	0.0	0.0	2796.4	33.0	147.2	405.8	12.4	3.6	22340.0	520.0	2.7	34580.0	3502.0	13420.0	3356.0	43.9	179.6	973.8

Red numbers indicate that the concentration was below the indicated detection limit

Table B-36. Groundwater Quality Data for Bore MB12-35, Copper Extraction Pad area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB12-35 (Dry Season)																							
MB12-35	8-Nov-12	4.6	10390		1680			9,120	65	448	1,440	120	6	5,310	127000.0	22.6	442,000	116,000	379,000	93000.00	40.30	23	195,000
MB12-35	8-Oct-13	4.2	10400		1394			8,180	55	380	1,310	37	5	16,200	89100.0	<20	472,000	79,300	272,000	70300.00	<10	59	10,600

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB12-35	20-Oct-14	4.4	9420		1410			8,500	60	407	1,480	40	4	12,500	79100.0	19.6	511,000	90,000	330,000	80300.00	15.40	93	11,600
No. of samples		3.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		4.2	9420.0	0.0	1394.0	0.0	0.0	8180.0	55.0	380.0	1310.0	36.8	4.3	5310.0	79100.0	19.6	442000.0	79300.0	272000.0	70300.0	15.4	23.2	10600.0
Maximum		4.6	10400.0	0.0	1680.0	0.0	0.0	9120.0	65.0	448.0	1480.0	120.0	6.1	16200.0	127000.0	22.6	511000.0	116000.0	379000.0	93000.0	40.3	92.8	195000.0
Mean		4.4	10070.0		1494.7			8600.0	60.0	411.7	1410.0	65.4	5.2	11336.7	98400.0	21.1	475000.0	95100.0	327000.0	81200.0	27.9	58.4	72400.0
Standard Deviation		0.2	562.9		160.7			477.9	5.0	34.2	88.9	47.3	0.9	5537.4	25268.0	2.1	34597.7	18874.1	53563.0	11376.7	17.6	34.8	106175.9
80th Percentile		4.5	10396.0		1572.0			8872.0	63.0	431.6	1464.0	87.8	5.7	14720.0	111840.0	22.0	495400.0	105600.0	359400.0	87920.0	35.3	79.4	121640.0
MB12-35 (Wet Season)																							
MB12-35	28-Feb-13	4.5	10820		1220			8,700	65	430	1,520	44	4	9,240	68320.0	19.2	481,000	96,700	342,000	87800.00	20.00	41	14,500
MB12-35	21-Feb-14	4.2	9380		1476			7,470	45	353	1,210	34	5	15,800	92200.0	<20	516,000	86,700	310,000	76500.00	<10	55	11,100
No. of samples		2.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		4.2	9380.0	0.0	1220.0	0.0	0.0	7470.0	45.0	353.0	1210.0	33.9	4.2	9240.0	68320.0	19.2	481000.0	86700.0	310000.0	76500.0	20.0	40.8	11100.0
Maximum		4.5	10820.0	0.0	1476.0	0.0	0.0	8700.0	65.0	430.0	1520.0	43.5	4.6	15800.0	92200.0	19.2	516000.0	96700.0	342000.0	87800.0	20.0	55.3	14500.0
Mean		4.4	10100.0		1348.0			8085.0	55.0	391.5	1365.0	38.7	4.4	12520.0	80260.0	19.2	498500.0	91700.0	326000.0	82150.0	20.0	48.1	12800.0
Standard Deviation		0.2	1018.2		181.0			869.7	14.1	54.4	219.2	6.8	0.3	4638.6	16885.7		24748.7	7071.1	22627.4	7990.3		10.3	2404.2
80th Percentile		4.5	10532.0		1424.8			8454.0	61.0	414.6	1458.0	41.6	4.5	14488.0	87424.0	19.2	509000.0	94700.0	335600.0	85540.0	20.0	52.4	13820.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-37. Groundwater Quality Data for Bore MB12-34, Near the Intermediate Open Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB12-34 (Dry Season)																							
MB12-34	8-Nov-12	7.3	2495			152	185	1,270	20	191	236	31	3	19	<20	<0.2	10	4	225	18.50	<0.1	24	104
MB12-34	28-Oct-14	7.2	2745			156	190	1,630	45	223	328	32	4	10	652.0	<0.2	2	32	1,060	33.50	0.12	8	5
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.2	2495.0	0.0	0.0	152.0	185.4	1270.0	20.0	191.0	236.0	30.6	2.6	9.5	652.0	0.0	1.7	3.7	225.0	18.5	0.1	7.6	4.6
Maximum		7.3	2745.0	0.0	0.0	156.0	190.3	1630.0	45.0	223.0	328.0	31.6	4.1	19.0	652.0	0.0	9.9	32.2	1060.0	33.5	0.1	23.7	104.0
Mean		7.2	2620.0			154.0	187.9	1450.0	32.5	207.0	282.0	31.1	3.4	14.3	652.0		5.8	18.0	642.5	26.0	0.1	15.7	54.3
Standard Deviation		0.1	176.8			2.8	3.5	254.6	17.7	22.6	65.1	0.7	1.1	6.7			5.8	20.2	590.4	10.6		11.4	70.3
80th Percentile		7.3	2695.0			155.2	189.3	1558.0	40.0	216.6	309.6	31.4	3.8	17.1	652.0		8.3	26.5	893.0	30.5	0.1	20.5	84.1
MB12-34 (Wet Season)																							
MB12-34	18-Feb-13	6.7	1487			121	148	670	15	113	122	20	2	21	24.0	0.1	10	6	185	22.50	0.07	5	42
MB12-34	21-Feb-14	7.0	3215			202	246	1,540	35	213	308	35	4	41	660.0	<0.1	5	20	843	18.00	0.07	7	5
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.7	1487.0	0.0	0.0	121.2	147.9	670.0	15.0	113.0	122.0	20.1	1.7	21.1	24.0	0.1	5.2	5.8	185.0	18.0	0.1	5.0	4.9
Maximum		7.0	3215.0	0.0	0.0	202.0	246.4	1540.0	35.0	213.0	308.0	35.4	4.2	40.6	660.0	0.1	9.8	20.0	843.0	22.5	0.1	7.1	41.8
Mean		6.8	2351.0			161.6	197.2	1105.0	25.0	163.0	215.0	27.8	3.0	30.9	342.0	0.1	7.5	12.9	514.0	20.3	0.1	6.0	23.4
Standard Deviation		0.2	1221.9			57.1	69.7	615.2	14.1	70.7	131.5	10.8	1.8	13.8	449.7		3.2	10.1	465.3	3.2	0.0	1.4	26.1
80th Percentile		6.9	2869.4			185.8	226.7	1366.0	31.0	193.0	270.8	32.3	3.7	36.7	532.8	0.1	8.9	17.2	711.4	21.6	0.1	6.7	34.4

Red numbers indicate that the concentration was below the indicated detection limit

Table B-38. Groundwater Quality Data for Bore RN022543, Near the Intermediate Open Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling**	**pH**	**EC**	**pH**	**Acidity**	**HCO_3 Alkalinity**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

		EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic														300.0		1000		100				3000
ADWG 2015 Health															2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%													150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%													80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%													55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation													5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water		4500											5000		10.0	400	1000		1000.00	100.00	200	20000
	Date		uS/cm		mg/L	mg/L as CaCO3																
RN022543 (Dry Season)																						
RN022543	28-Oct-08		2199	7.8		40	49	1,150	45	122	259	18	2	10	200.0	<0.2	1	1	22	1.60	<0.1	3	4
RN022543	2-Sep-11	7.5	2829			85	104	1,310	55	128	285	16	1	12	<20	<0.2	<0.1	1	196	<0.1	<0.1	2	<1
RN022543	29-Oct-14	7.7	2318			98	120	1,340	75	140	297	19	1	7	<20	<0.2	8	3	81	3.65	<0.1	3	3
RN022543	1-Oct-13	7.5	2883			103	126	1,330	55	131	293	18	1	12	12.0	<0.1	1	1	153	11.80	0.08	2	4
RN022543	8-Oct-12	7.6	2624			98	120	1,380	55	135	307	19	1	10	26.0	<0.1	0	1	151	1.01	<0.05	2	4
RN022543	23-Sep-10	7.7	2574	-		109	132	1,300	50	114	302	17	1	4	<200	<0.2	-	0	37	0.50	<0.1	1	
No. of samples		5.0	6.0	2.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0
Minimum		7.5	2199.0	7.8	0.0	40.0	48.8	1150.0	45.0	114.0	259.0	15.5	0.8	4.0	12.0	0.0	0.3	0.2	22.0	0.5	0.1	1.2	3.4
Maximum		7.7	2883.0	7.8	0.0	109.2	132.1	1380.0	75.0	140.0	307.0	18.7	1.5	12.0	200.0	0.0	7.6	3.1	196.0	11.8	0.1	2.8	4.3
Mean		7.6	2571.2	7.8		88.9	108.2	1301.7	55.8	128.3	290.5	17.7	1.2	8.9	79.3		2.4	1.2	106.8	3.7	0.1	2.1	3.7
Standard Deviation		0.1	271.7			25.2	30.6	79.4	10.2	9.3	17.2	1.2	0.2	3.1	104.7		3.5	1.0	70.3	4.7		0.7	0.4
80th Percentile		7.7	2829.0	7.8		103.0	125.7	1340.0	55.0	135.0	302.0	18.6	1.3	11.7	130.4		3.8	1.3	153.0	5.3	0.1	2.6	3.9
RN022543 (Wet Season)																						
RN022543	31-Mar-11	7.6	2319	8.1				1,240	55	129	275	18	1	19	<200	<0.2	1	1	143	1.90	0.20	2	2
RN022543	15-Apr-09	7.8	2644				805	1,360		117	296			6	<200	<0.2	0	1	11	0.10	<0.1	2	<5
RN022543	1-Mar-12	7.6	2447			126	154	1,240	50	140	264	18	1	59	<20	<0.2	3	1	108	1.31	0.14	2	12
RN022543	15-Feb-13	7.2	2625			110	134	1,280	50	132	282	18	1	55	<10	0.1	11	17	144	16.00	0.11	109	22
RN022543	5-Feb-14	7.5	2445			114	139	1,140	50	132	245	17	1	73	14.0	<0.1	18	3	69	4.43	0.16	3	82
No. of samples		5.0	5.0	1.0	0.0	3.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.2	2319.0	8.1	0.0	110.0	134.2	1140.0	50.0	117.0	245.0	16.8	0.8	6.0	14.0	0.1	0.4	0.5	11.1	0.1	0.1	2.0	2.0
Maximum		7.8	2644.0	8.1	0.0	126.0	804.5	1360.0	55.0	140.0	296.0	18.3	1.2	73.4	14.0	0.1	18.3	16.7	144.0	16.0	0.2	109.0	81.5
Mean		7.5	2496.0	8.1		116.7	307.9	1252.0	51.3	130.0	272.4	17.5	1.0	42.4	14.0	0.1	6.7	4.4	95.0	4.7	0.2	23.7	29.2
Standard Deviation		0.2	136.8			8.3	331.2	79.5	2.5	8.3	19.2	0.6	0.2	28.5			7.8	6.9	56.1	6.5	0.0	47.7	35.8
80th Percentile		7.6	2628.8	8.1		121.2	414.0	1296.0	52.0	133.6	284.8	17.8	1.1	61.6	14.0	0.1	12.4	5.7	143.2	6.7	0.2	24.4	45.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-39. Groundwater Quality Data for Bore MB10-7, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-7 (Dry Season)																							
MB10-7	14-Dec-10	6.4	2,395					1,210	35	121	239	26	0	16	<200	<0.2		13	549	71.30		1	15
MB10-7	29-Aug-11	7.3	2,739			96	117	1,410	40	142	293	38	0	8	<20	<0.2	<0.1	1	36	4.63	<0.1	2	2
MB10-7	2-Oct-13	7.4	2,926			156	190	1,350	45	136	291	37	1	44	24.0	<0.1	1	2	98	3.70	0.09	6	7
MB10-7	24-Oct-14	7.3	2,813			176	215	1,450	45	149	320	38	<0.1	25	2.0	<0.02	3	0	2	1.46	0.05	6	10
MB10-7	17-Oct-12	7.3	2,687			124	151	1,360	40	141	298	38	0	11	<10	<0.1	1	4	43	3.38	0.13	5	6
No. of samples		5.0	5.0	0.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	5.0	5.0
Minimum		6.4	2395.0	0.0	0.0	96.0	117.1	1210.0	35.0	121.0	239.0	25.6	0.3	8.4	2.0	0.0	1.2	0.4	2.4	1.5	0.1	0.9	2.0
Maximum		7.4	2926.0	0.0	0.0	176.0	214.7	1450.0	45.0	149.0	320.0	37.9	0.6	43.8	24.0	0.0	3.3	13.2	549.0	71.3	0.1	6.0	15.0
Mean		7.1	2711.9			138.0	168.4	1356.0	41.0	137.8	288.2	35.1	0.4	20.8	13.0		1.9	4.1	145.7	16.9	0.1	4.0	7.9
Standard Deviation		0.4	198.6			35.3	43.0	91.0	4.2	10.5	29.8	5.3	0.1	14.2	15.6		1.2	5.2	228.0	30.4	0.0	2.2	4.9
80th Percentile		7.3	2835.4			164.0	200.1	1418.0	45.0	143.4	302.4	37.7	0.5	28.4	19.6		2.5	5.7	187.9	18.0	0.1	5.9	10.9
MB10-7 (Wet Season)																							
MB10-7	28-Feb-12	7.3	2,873			140	171	1,480	35	150	313	40	0	26	<20	<0.2	3	0	55	2.89	<0.1	12	2

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-7	12-Feb-13	7.3	2,660			177	216	1,390	40	144	305	39	0	19	<10	<0.1	6	2	19	4.32	0.06	3	5
MB10-7	7-Feb-14	7.2	2,581			136	166	1,250	35	128	269	33	0	33	<10	<0.1	16	2	12	4.31	0.21	2	46
MB10-7	26-Mar-15	7.3	2,829			122	149	1,340	40	134	295	36	0	45	<10	0.5	26	4	261	7.13	0.63	3	22
MB10-7	9-Feb-11	7.5	2,679					1,520	40	158	311	43		11	<200	<0.2	1	4	292	26.20	0.20	2	6
No. of samples		5.0	5.0	0.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.2	2581.0	0.0	0.0	122.0	148.8	1250.0	35.0	128.0	269.0	33.3	0.1	11.0	0.0	0.5	0.9	0.5	11.6	2.9	0.1	1.7	2.2
Maximum		7.5	2873.0	0.0	0.0	177.0	215.9	1520.0	40.0	158.0	313.0	42.9	0.3	45.0	0.0	0.5	25.9	3.9	292.0	26.2	0.6	11.5	46.2
Mean		7.3	2724.3			143.8	175.4	1396.0	38.0	142.8	298.6	38.2	0.2	26.9		0.5	10.3	2.5	127.6	9.0	0.3	4.3	16.2
Standard Deviation		0.1	122.2			23.5	28.6	108.3	2.7	12.0	18.0	3.8	0.1	13.1			10.5	1.4	137.3	9.8	0.2	4.1	18.5
80th Percentile		7.3	2837.6			154.8	188.9	1488.0	40.0	151.6	311.4	40.5	0.2	35.6		0.5	17.9	3.7	267.2	10.9	0.4	5.0	26.8

Red numbers indicate that the concentration was below the indicated detection limit

Table B-40. Groundwater Quality Data for Bore MB10-16, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-16 (Dry Season)																							
MB10-16	16-Dec-10	6.8	4,407			0	0	2,580	60	320	473	69	0	30	<200	<0.2			594	21.90		3	10
MB10-16	30-Aug-11	6.9	4,879			200	244	3,070	70	382	568	84	0	9	1070.0	<0.2	<0.1	1	803	8.74	<0.1	5	3
No. of samples		2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0
Minimum		6.8	4407.0	0.0	0.0	0.0	0.0	2580.0	60.0	320.0	473.0	69.1	0.3	8.5	1070.0	0.0	0.0	0.7	594.0	8.7	0.0	3.0	3.3
Maximum		6.9	4879.0	0.0	0.0	200.0	244.0	3070.0	70.0	382.0	568.0	83.5	0.3	30.0	1070.0	0.0	0.0	0.7	803.0	21.9	0.0	5.3	10.0
Mean		6.9	4643.0			100.0	122.0	2825.0	65.0	351.0	520.5	76.3	0.3	19.3	1070.0			0.7	698.5	15.3		4.1	6.7
Standard Deviation		0.1	333.8			141.4	172.5	346.5	7.1	43.8	67.2	10.2	0.0	15.2					147.8	9.3		1.7	4.7
80th Percentile		6.9	4784.6			160.0	195.2	2972.0	68.0	369.6	549.0	80.6	0.3	25.7	1070.0			0.7	761.2	19.3		4.9	8.7
MB10-16 (Wet Season)																							
MB10-16	13-Apr-11	6.9	4,872	7.7		210	256	2,960	55	372	549	90	1	25	1200.0	<0.2	0	2	952	12.40	<0.1	5	6
MB10-16	12-Feb-13	6.9	4,931			236	288	3,120	70	399	587	103	1	17	286.0	<0.1	11	2	996	7.81	0.12	6	13
MB10-16	11-Feb-14	7.1	5,010			260	317	3,020	70	383	573	110	1	57	2410.0	<0.2	3	2	2,350	4.70	0.37	12	17
No. of samples		3.0	3.0	1.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.9	4872.0	7.7	0.0	210.0	256.2	2960.0	55.0	372.0	549.0	90.1	0.5	17.2	286.0	0.0	0.4	1.9	952.0	4.7	0.1	4.9	6.0
Maximum		7.1	5010.0	7.7	0.0	260.0	317.2	3120.0	70.0	399.0	587.0	110.0	0.8	57.4	2410.0	0.0	11.2	2.4	2350.0	12.4	0.4	11.8	16.7
Mean		7.0	4937.7	7.7		235.3	287.1	3033.3	65.0	384.7	569.7	101.0	0.6	33.2	1298.7		5.0	2.1	1432.7	8.3	0.2	7.7	11.9
Standard Deviation		0.1	69.2			25.0	30.5	80.8	8.7	13.6	19.2	10.1	0.2	21.3	1065.4		5.6	0.2	794.7	3.9	0.2	3.6	5.4
80th Percentile		7.0	4978.4	7.7		250.4	305.5	3080.0	70.0	392.6	581.4	107.2	0.7	44.4	1926.0		8.1	2.3	1808.4	10.6	0.3	9.7	15.2

Red numbers indicate that the concentration was below the indicated detection limit

Table B-41. Groundwater Quality Data for Bore MB10-12, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-12 (Dry Season)																							
MB10-12	14-Dec-10	7.2	4,449			0	0	2,520	65	297	475	74	0	19	<200	<0.2	1		65			7	1
MB10-12	29-Aug-11	7.3	4,359			202	246	2,440	55	301	459	65	<0.1	11	<20	<0.2	1	2	59	0.74	<0.1	6	2
MB10-12	11-Oct-12	7.2	4,172			232	283	2,360	50	299	460	68	0	10	<10	<0.1	5	1	2	1.13	0.05	6	3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	3.0
Minimum		7.2	4172.0	0.0	0.0	0.0	0.0	2360.0	50.0	297.0	459.0	64.5	0.1	9.8	0.0	0.0	1.1	1.5	2.1	0.7	0.1	5.8	1.0
Maximum		7.3	4449.0	0.0	0.0	232.0	283.0	2520.0	65.0	301.0	475.0	73.8	0.4	19.0	0.0	0.0	4.9	2.3	65.1	1.1	0.1	6.7	3.4
Mean		7.2	4326.7			144.7	176.5	2440.0	56.7	299.0	464.7	68.8	0.3	13.4			2.4	1.9	42.1	0.9	0.1	6.3	2.2
Standard Deviation		0.1	141.3			126.2	153.9	80.0	7.6	2.0	9.0	4.7	0.2	4.9			2.1	0.6	34.8	0.3		0.5	1.2
80th Percentile		7.3	4413.0			220.0	268.4	2488.0	61.0	300.2	469.0	71.5	0.3	15.9			3.4	2.1	62.7	1.1	0.1	6.6	2.9
MB10-12 (Wet Season)																							
MB10-12	8-Feb-11	7.6	3,973			0	0	2,440	60	298	457	80		53	<200	<0.2	78	73	186	47.40	0.40	6	13
MB10-12	29-Feb-12	7.3	4,088			224	273	2,390	50	301	456	68	0	33	<20	<0.2	3	<0.1	10	<0.1	<0.1	13	2
MB10-12	12-Feb-13	7.1	3,777			208	254	2,250	50	291	443	67	<0.1	21	<10	<0.1	19	7	36	5.15	0.13	6	15
MB10-12	5-Feb-14	7.2	4,056			218	266	2,050	45	262	409	59	<0.1	20	<10	<0.1	3	1	12	0.86	0.12	6	6
MB10-12	25-Mar-15	7.2	3,807			190	232	2,010	40	257	394	57	<0.1	17	14.0	<0.1	2	2	17	1.78	0.09	5	9
No. of samples		5.0	5.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.1	3777.0	0.0	0.0	0.0	0.0	2010.0	40.0	257.0	394.0	57.1	0.2	16.5	14.0	0.0	1.9	0.7	10.0	0.9	0.1	5.0	2.3
Maximum		7.6	4088.0	0.0	0.0	224.0	273.3	2440.0	60.0	301.0	457.0	79.5	0.2	53.0	14.0	0.0	77.9	72.7	186.0	47.4	0.4	13.1	14.9
Mean		7.3	3940.2			168.0	205.0	2228.0	49.0	281.8	431.8	66.0	0.2	28.8	14.0		21.0	20.6	52.0	13.8	0.2	7.3	8.9
Standard Deviation		0.2	142.0			94.8	115.6	194.2	7.4	20.8	28.7	8.9		14.8			32.6	34.8	75.6	22.5	0.1	3.3	5.1
80th Percentile		7.3	4062.4			219.2	267.4	2400.0	52.0	298.6	456.2	70.2	0.2	37.0	14.0		30.9	33.2	65.8	22.1	0.2	7.8	13.4

Red numbers indicate that the concentration was below the indicated detection limit

Table B-42. Groundwater Quality Data for Bore MB10-13, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-13 (Dry Season)																							
MB10-13	14-Dec-10	8.1	369			100	122	35	5	18	26	3	0	18	<200	<0.2			2		1.30	0	
MB10-13	18-Oct-12	7.9	321			102	124	20	<5	16	25	5	0	19	2.0	0.0	11	10	28	8.11	0.18	1	3
MB10-13	29-Aug-11	8.1	349			102	124	26	<5	17	26	4	0	21	4.0	<0.02	<0.01	0	8	0.18	0.75	1	<0.1
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	2.0	3.0	3.0	2.0
Minimum		7.9	320.6	0.0	0.0	100.0	122.0	20.3	5.0	16.2	25.1	2.7	0.2	18.0	2.0	0.0	10.8	0.2	1.8	0.2	0.2	0.4	3.0
Maximum		8.1	368.6	0.0	0.0	102.0	124.4	34.5	5.0	17.9	26.4	4.6	0.3	20.5	4.0	0.0	10.8	9.8	28.3	8.1	1.3	1.1	3.0
Mean		8.0	346.2			101.3	123.6	26.8	5.0	17.1	26.0	3.6	0.2	19.1	3.0	0.0	10.8	5.0	12.7	4.1	0.7	0.8	3.0
Standard Deviation		0.1	24.2			1.2	1.4	7.2		0.9	0.8	1.0	0.1	1.3	1.4			6.8	13.8	5.6	0.6	0.4	
80th Percentile		8.1	360.9			102.0	124.4	30.9	5.0	17.7	26.4	4.2	0.3	19.8	3.6	0.0	10.8	7.9	20.2	6.5	1.1	1.0	3.0
MB10-13 (Wet Season)																							
MB10-13	8-Feb-11	8.5	363			100	122	34	5	17	26	4	0	14	<200	<0.2	7	1	5	1.20	0.50	0	4
MB10-13	29-Feb-12	8.0	334			122	149	20	<5	17	26	4	0	42	<2	<0.02	1	0	1	0.27	0.15	1	1
MB10-13	11-Feb-13	8.0	310			97	118	18	<5	16	25	4	0	26	4.0	0.0	5	2	15	2.12	0.26	1	14
MB10-13	5-Feb-14	8.0	323			104	127	16	<5	15	23	3	0	36	4.0	<0.02	6	1	3	0.77	0.25	0	10
MB10-13	25-Mar-15	7.8	356			98	120	20	<5	16	25	9	0	33	4.0	0.1	4	1	5	0.79	0.19	1	4
No. of samples		5.0	5.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.8	309.9	0.0	0.0	97.0	118.3	16.3	5.0	14.7	23.2	3.4	0.2	14.0	4.0	0.0	0.6	0.0	1.3	0.3	0.2	0.5	0.5
Maximum		8.5	363.0	0.0	0.0	122.0	148.8	33.8	5.0	17.4	26.0	8.7	0.3	42.4	4.0	0.1	6.6	2.1	15.2	2.1	0.5	1.3	13.6
Mean		8.0	337.3			104.2	127.1	21.6	5.0	16.0	24.8	4.7	0.3	30.2	4.0	0.1	4.6	0.9	5.8	1.0	0.3	0.9	6.4
Standard Deviation		0.3	22.2			10.3	12.6	7.0		1.0	1.1	2.2	0.1	10.7	0.0	0.0	2.4	0.8	5.5	0.7	0.1	0.4	5.2
80th Percentile		8.1	357.6			107.6	131.3	23.1	5.0	16.8	25.7	5.1	0.3	36.9	4.0	0.1	6.4	1.5	7.2	1.4	0.3	1.3	10.5

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)		Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic				300.0		1000		100				3000
ADWG 2015 Health					2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%			150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%			80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%			55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation			5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500		5000		10.0	400	1000		1000.00	100.00	200	20000

Red numbers indicate that the concentration was below the indicated detection limit

Table B-43. Groundwater Quality Data for Historic RN022108, Near the East Branch of the Finniss River/Intermediate Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022108 (Dry Season), open hole																						
RN022108	19-May-09	7.9	897	8.3		25	31	310	9	29	63	9	2	5	<20	<0.02	1	1	158	1.07	<0.01	0.3	1
RN022108	13-Oct-09	8.7	491	6.8		31	38	168	8	15	38	8	2	6	160.0	<0.02	0	2	118	2.90	<0.01	0.3	1
RN022108	18-Nov-09	8.9	352	8.0		32	39	129	8	10	32	7	2	19	400.0	<0.02	0	1	132	0.61	0.03	1	1
RN022108	14-Jan-10	8.1	387	8.5		23	28	131	8	12	29	8	2	2	<20	<0.02	1	0.0	40	0.13	<0.01	0.0	0.3
RN022108	10-Aug-10	7.5	603			62	75	189	<5	34	44	5	1	12	<200	<0.2	1	4	10	11.30	<0.1	5	3
RN022108	16-Jul-09	8.9	595	9.0		16	20	232	9	21	46	8	2	30	<200	<0.2	6	4	140	4.65	<0.1	0.4	<1
RN022108	1-Sep-09	9.3	537	8.4		25	30	200	9	20	45	8	2	17	<200	<0.2	<0.1	0.1	83	0.48	<0.1	1	<1
No. of samples		7.0	7.0	6.0	0.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum		7.5	352.0	6.8	0.0	16.4	20.0	129.0	7.7	9.8	28.5	5.4	1.2	2.0	160.0	0.0	0.4	0.0	10.1	0.1	0.0	0.0	0.3
Maximum		9.3	896.5	9.0	0.0	62.2	75.4	310.0	9.4	34.1	63.1	8.5	2.2	30.4	400.0	0.0	5.5	4.0	158.0	11.3	0.0	4.5	3.0
Mean		8.5	551.6	8.2		30.7	37.3	194.1	8.5	20.1	42.4	7.4	1.8	13.0	280.0		1.4	1.6	97.3	3.0	0.0	1.0	1.3
Standard Deviation		0.6	180.0	0.7		14.9	18.0	63.0	0.8	8.7	11.4	1.0	0.3	9.8	169.7		2.0	1.6	55.2	4.0		1.6	1.0
80th Percentile		8.9	601.4	8.5		31.8	38.8	225.6	9.4	26.9	45.8	7.8	1.9	18.2	352.0		0.9	3.2	138.4	4.3	0.0	0.8	1.7
RN022108 (Wet Season), open hole																						
RN022108	14-Jan-10	8.1	387	8.5		23	28	131	8	12	29	8	2	2	<20	<0.02	1	0.0	40	0.13	<0.01	0.0	0.3

Red numbers indicate that the concentration was below the indicated detection limit

Table B-44. Groundwater Quality Data for MB10-9S (RN22108S) RN023516, Near the East Branch of the Finniss River/Intermediate Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-9S (Dry Season)																						
MB10-9S	26-Aug-11	7.3	1384			160	195	553	10	84	115	13	2	11	294.0	<0.2	2	28	719	20.60	<0.1	20	3
MB10-9S	28-Oct-14	7.4	434			94	115	350	10	58	78	11	2	12	220.0	<0.02	3	19	474	11.20	0.13	9	3
MB10-9S	17-Dec-10	7.5	703			130	159	236	5	41	51	7	2	18	<200	<0.2	12	6	221	8.10		9	2
MB10-9S	17-Oct-12	7.2	1333			152	185	479	10	73	101	24	3	45	462.0	<0.02	1	9	567	6.18	0.55	16	4
No. of samples		4.0	4.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Minimum		7.2	433.7	0.0	0.0	94.0	114.7	236.0	5.0	40.6	50.6	6.6	1.5	10.6	220.0	0.0	0.5	6.4	221.0	6.2	0.1	8.5	2.0
Maximum		7.5	1384.0	0.0	0.0	160.0	195.2	553.0	10.0	83.8	115.0	23.9	2.6	44.6	462.0	0.0	12.3	28.3	719.0	20.6	0.6	19.9	3.9
Mean		7.4	963.4			134.0	163.5	404.5	8.8	63.8	86.1	13.8	2.0	21.2	325.3		4.4	15.5	495.3	11.5	0.3	13.2	3.0
Standard Deviation		0.1	469.7			29.5	36.0	140.2	2.5	18.8	28.2	7.3	0.5	16.0	124.0		5.4	10.1	208.9	6.4	0.3	5.5	0.8
80th Percentile		7.4	1353.4			155.2	189.3	508.6	10.0	77.3	106.6	17.5	2.4	28.6	394.8		6.6	22.6	627.8	15.0	0.5	17.3	3.4
MB10-9S (Wet Season)																						
MB10-9S	29-Feb-12	7.2	1683			126	154	739	15	105	153	18	3	26	586.0	<0.2	5	66	1,050	36.70	<0.1	23	6
MB10-9S	11-Feb-13	7.3	1175			130	159	478	10	73	101	13	2	45	204.0	0.1	4	24	551	17.60	0.28	11	7
MB10-9S	8-Feb-11	7.8	685			130	159	235	5	42	51	9	2	38	<200	<0.2	1	4	259	6.90		9	2
MB10-9S	7-Feb-14	7.4	990			96	117	319	10	53	70	13	2	293	520.0	<0.02	19	11	444	10.20	1.04	6	39
MB10-9S	26-Mar-15	7.3	952			104	127	317	5	54	71	10	1	22	132.0	<0.02	0	14	451	8.26	0.05	7	3
No. of samples		5.0	5.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Minimum		7.2	685.0	0.0	0.0	96.0	117.1	235.0	5.0	41.6	50.9	9.2	1.3	21.7	132.0	0.1	0.4	4.2	259.0	6.9	0.1	6.1	2.0
Maximum		7.8	1683.0	0.0	0.0	130.0	158.6	739.0	15.0	105.0	153.0	18.4	2.5	293.0	586.0	0.1	19.1	65.7	1050.0	36.7	1.0	23.0	38.5
Mean		7.4	1097.0			117.2	143.0	417.6	9.0	65.2	89.2	12.6	1.8	84.7	360.5	0.1	5.8	23.9	551.0	15.9	0.5	11.3	11.3
Standard Deviation		0.2	371.4			16.0	19.6	200.1	4.2	24.9	39.9	3.6	0.4	116.8	225.8		7.7	24.4	298.2	12.3	0.5	6.8	15.3
80th Percentile		7.4	1276.6			130.0	158.6	530.2	11.0	79.2	111.4	14.0	2.0	94.3	546.4	0.1	7.7	32.5	650.8	21.4	0.7	13.6	13.4
RN023516 (Dry Season)																							
RN023516	28-Sep-12	5.5	518			12	15	197	<5	24	36	5	1	10	174.0	0.5	59	129	552	134.00	1.33	1	172
RN023516 (Wet Season)																							
RN023516	31-Mar-11	4.7	402	5.5				160	5	15	30	5	1	153	200.0	0.6	418	222	981	214.00	2.50	3	247
RN023516	29-Feb-12	5.3	462			16	20	172	<5	19	33	5	1	32	328.0	0.5	81	175	707	158.00	0.24	1	215
RN023516	7-Apr-09		820	4.7		40	49	328		29	56			387	400.0		904	692	1,520	634.00		6	865
RN023516	18-Feb-13	5.4	468			14	17	163	<5	20	30	5	1	26	622.0	0.4	71	122	615	113.00	0.26	2	163
RN23516	11-Feb-14	5.2	409					123	<5	15	24	5	1	79	166.0	0.2	259	62	400	106.00	1.01	2	120
No. of samples		4.0	5.0	2.0	0.0	3.0	3.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
Minimum		4.7	402.4	4.7	0.0	14.0	17.1	123.0	5.0	14.6	24.2	4.5	0.5	25.6	166.0	0.2	71.0	61.6	400.0	106.0	0.2	1.2	120.0
Maximum		5.4	820.0	5.5	0.0	40.0	48.8	328.0	5.0	29.0	56.0	5.2	0.8	387.0	622.0	0.6	904.0	692.0	1520.0	634.0	2.5	5.8	865.0
Mean		5.1	512.4	5.1		23.3	28.5	189.2	5.0	19.5	34.5	4.9	0.7	135.4	343.2	0.4	346.6	254.5	844.6	245.0	1.0	2.6	322.0
Standard Deviation		0.3	174.5	0.6		14.5	17.7	79.8		5.8	12.4	0.3	0.1	149.6	182.4	0.2	342.8	251.8	431.3	221.7	1.1	1.9	307.4
80th Percentile		5.3	538.5	5.3		30.4	37.1	203.2	5.0	21.6	37.3	5.0	0.7	199.8	444.4	0.5	515.2	316.0	1088.8	298.0	1.6	3.2	370.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-45. Groundwater Quality Data for Bore MB10-9D, (RN22108D) Near the East Branch of the Finniss River/Intermediate Pit

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-9D (Dry Season)																							
MB10-9D	17-Dec-10	6.7	4760					2,910	60	300	600	43	5	47	7600.0	0.2	56	897	12,300	384.00	3.50	160	79
MB10-9D	17-Oct-12	7.0	5050			256	312	3,020	70	330	638	52	5	18	1860.0	<0.2	2	155	4,700	51.20	2.46	320	27
MB10-9D	28-Oct-14	6.9	4670			366	447	3,270	85	346	697	54	6	18	2350.0	<0.2	46	393	5,420	144.00	<0.1	316	38
MB10-9D	26-Aug-11	7.1	4852			260	317	2,770	70	299	580	44	5	27	1760.0	<0.2	1	238	5,740	86.70	0.17	267	18
MB10-9D	17-Oct-12	7.0	5050			256	312	3,050	70	331	641	52	5	15	1730.0	<0.2	1	151	4,590	50.10	2.55	307	27
No. of samples		5.0	5.0	0.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.7	4670.0	0.0	0.0	256.0	312.3	2770.0	60.0	299.0	580.0	42.9	4.6	14.8	1730.0	0.2	1.0	151.0	4590.0	50.1	0.2	160.0	18.4
Maximum		7.1	5050.0	0.0	0.0	366.0	446.5	3270.0	85.0	346.0	697.0	54.3	5.5	47.0	7600.0	0.2	55.7	897.0	12300.0	384.0	3.5	320.0	79.0
Mean		6.9	4876.4			284.5	347.1	3004.0	71.0	321.2	631.2	49.0	5.2	24.9	3060.0	0.2	21.2	366.8	6550.0	143.2	2.2	274.0	37.8
Standard Deviation		0.1	171.0			54.4	66.3	184.9	8.9	20.8	44.9	5.3	0.4	13.2	2550.2		27.4	312.2	3250.4	139.9	1.4	67.1	24.0
80th Percentile		7.0	5050.0			302.4	368.9	3094.0	73.0	334.0	652.2	52.6	5.4	30.9	3400.0	0.2	48.1	493.8	7052.0	192.0	2.9	316.8	45.8
MB10-9D (Wet Season)																							
MB10-9D	8-Feb-11	6.7	4735					3,260	70	342	673	58	5	23	11600.0	<0.2	51	1,040	15,200	407.00	0.50	182	83
MB10-9D	11-Feb-13	6.5	5050			260	317	3,360	75	359	706	58	5	21	5550.0	0.2	73	876	10,700	384.00	0.37	205	91
MB10-9D	7-Feb-14	6.9	5290			338	412	3,050	65	328	654	53	5	54	2790.0	<0.2	31	333	5,680	117.00	0.39	323	28
MB10-9D	7-Feb-14	6.9	5290			338	412	3,080	70	331	663	53	5	67	2820.0	<0.2	48	345	5,840	124.00	0.98	320	95
MB10-9D	26-Mar-15	6.5	5551			362	442	3,270	190	341	697	55	3	25	2070.0	<0.2	18	959	8,590	392.00	<0.1	237	86
No. of samples		5.0	5.0	0.0	0.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.5	4735.0	0.0	0.0	260.0	317.2	3050.0	65.0	328.0	654.0	52.8	2.9	21.1	2070.0	0.2	18.1	333.0	5680.0	117.0	0.4	182.0	28.2
Maximum		6.9	5550.5	0.0	0.0	362.0	441.6	3360.0	190.0	359.0	706.0	58.3	5.3	66.7	11600.0	0.2	72.8	1040.0	15200.0	407.0	1.0	323.0	95.4

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)									Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic													300.0		1000		100				3000
ADWG 2015 Health														2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%												150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%												80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%												55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation												5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500									5000		10.0	400	1000		1000.00	100.00	200	20000
Mean		6.7	5183.1		324.5	395.9	3204.0	94.0	340.2	678.6	55.5	4.7	38.0	4966.0	0.2	44.2	710.6	9202.0	284.8	0.6	253.4	76.7
Standard Deviation		0.2	306.7		44.5	54.2	133.2	53.8	12.2	22.2	2.6	1.0	21.1	3939.5		20.8	344.2	3946.6	150.2	0.3	65.2	27.5
80th Percentile		6.9	5342.1		347.6	424.1	3288.0	98.0	345.4	698.8	58.1	5.2	56.9	6760.0	0.2	55.4	975.2	11600.0	395.0	0.7	320.6	91.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-46. Groundwater Quality Data for Bores MB10-14 and MB10-15, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-14 (Dry Season)																						
MB10-14	2-Dec-10	6.1	1525			0	0	737	15	117	125	19	1	71	<200	<0.2	18	16	4,960	45.10	0.50	1	15
MB10-14	2-Sep-11	6.5	1916			72	88	915	15	142	156	24	1	6	<20	<0.2	28	3	3,530	17.80	<0.1	2	9
MB10-14	11-Oct-12	6.7	1296			135	165	495	10	93	99	13	0	6	8.0	0.0	2	2	852	6.04	0.03	2	4
No. of samples		3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.1	1296.0	0.0	0.0	0.0	0.0	495.0	10.0	92.7	98.6	13.0	0.4	6.2	8.0	0.0	2.3	2.0	852.0	6.0	0.0	1.4	3.5
Maximum		6.7	1916.0	0.0	0.0	135.2	164.9	915.0	15.0	142.0	156.0	24.0	0.8	71.0	8.0	0.0	27.7	16.0	4960.0	45.1	0.5	2.0	15.0
Mean		6.4	1579.0			69.1	84.3	715.7	13.3	117.2	126.5	18.5	0.7	27.8	8.0	0.0	16.1	7.1	3114.0	23.0	0.3	1.7	9.0
Standard Deviation		0.3	313.5			67.6	82.5	210.8	2.9	24.7	28.7	5.5	0.2	37.4			12.8	7.7	2085.4	20.0	0.3	0.3	5.8
80th Percentile		6.6	1759.6			109.9	134.1	843.8	15.0	132.0	143.6	21.8	0.8	45.1	8.0	0.0	24.0	10.9	4388.0	34.2	0.4	1.9	12.4
MB10-14 (Wet Season)																						
MB10-14	31-Mar-11	6.2	2382	7.3		0	0	1,310	20	197	227	38	1	35	<200	<0.2	5	8	4,860	48.70	0.40	3	15
MB10-14	1-Mar-12	6.6	1504			118	144	660	10	113	122	19	0	30	<20	<0.2	8	2	1,680	11.90	<0.1	7	13
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.2	1504.0	7.3	0.0	0.0	0.0	660.0	10.0	113.0	122.0	18.6	0.3	29.5	0.0	0.0	4.5	1.9	1680.0	11.9	0.4	2.9	13.1
Maximum		6.6	2382.0	7.3	0.0	118.0	144.0	1310.0	20.0	197.0	227.0	37.7	0.8	35.0	0.0	0.0	8.3	8.4	4860.0	48.7	0.4	7.1	15.0
Mean		6.4	1943.0	7.3		59.0	72.0	985.0	15.0	155.0	174.5	28.2	0.6	32.3			6.4	5.2	3270.0	30.3	0.4	5.0	14.1
Standard Deviation		0.2	620.8			83.4	101.8	459.6	7.1	59.4	74.2	13.5	0.4	3.9			2.7	4.6	2248.6	26.0		3.0	1.3
80th Percentile		6.5	2206.4	7.3		94.4	115.2	1180.0	18.0	180.2	206.0	33.9	0.7	33.9			7.5	7.1	4224.0	41.3	0.4	6.3	14.6
MB10-15 (Dry Season)																						
MB10-15	3-Dec-10	6.6	1460			0	0	554	55	101	98	20	5	26	<200	1.2	32	1,390	6,430	1110.00	0.10	3	125
MB10-15 (Wet Season)																						
MB10-15	15-Apr-11	7.4	1276	7.5		0	0	477	20	105	85	14	6	15	<200	0.8	78	390	2,580	304.00	<0.1	19	140

Red numbers indicate that the concentration was below the indicated detection limit

Table B-47. Groundwater Quality Data for Bore RN022107, Central Mining Area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN022107 (Dry Season)																						
RN022107	11-Jun-08	8.1	1862	7.6			65	1,010	18	95	206	28	4	1	<200	<0.2	1	0	2,340	<0.1	<0.1	0	2
RN022107	16-Jul-08	8.0	2170	7.7			114	1,080	17	122	223	22	4	<1	<200	<0.2	4	154	6,610	133.00	<0.1	1	168
RN022107	22-Oct-08	8.4	2033	8.0			79	981	19	75	207	25	5	6	<200	<0.2	1	1	1,390	1.25	<0.1	0	2
RN022107	18-Nov-09	8.0	1743	7.5			49	997	21	67	207	24	4	12	<200	<0.2	0	1	612	0.80	<0.1	4	<1
RN022107	28-Oct-14	8.7	1463			30	37	808	15	79	161	24	2	10	78.0	<0.02	4	1	362	1.11	0.07	1	3
RN022107	29-Aug-11	7.6	2259			110	134	1,120	15	136	218	17	3	12	2990.0	<0.2	<0.1	54	9,980	24.50	0.12	6	4
RN022107	1-Sep-09	8.2	1921	7.8			50	973	20	76	220	23	4	8	<200	<0.2	<0.1	1	836	1.37	<0.1	5	<1

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
RN022107	1-Oct-13	7.8	2107			69	84	976	15	117	186	23	2	14	724.0	<0.1	0	1	2,230	0.78	0.07	1	1
RN022107	8-Oct-12	8.2	1943			49	60	1,090	20	105	218	22	3	7	60.0	<0.2	0	0	1,140	0.70	<0.1	1	1
RN022107	12-Aug-10	6.2	2480	-		108	132	1,300	20	165	238	22	2	14	3800.0	0.6	1	991	28,800	702.00	<0.1	12	448
RN022107	13-Oct-09	7.8	2007	6.8			56	965	21	67	209	24	5	1	<200	<0.2	0	33	992	42.30	<0.1	3	6
RN022107	19-May-09	7.2	2050	7.8			92	1,120	21	96	237	26	5	12	<200	<0.2	2	2	2,500	1.46	0.53	2	8
RN022107	16-Jul-09	7.4	1960	7.9			60	997	19	75	204	22	4	<1	<200	<0.2	0	3	1,180	3.44	<0.1	10	1
No. of samples		13.0	13.0	9.0	0.0	5.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Minimum		6.2	1463.0	6.8	0.0	30.4	37.1	808.0	15.0	66.5	161.0	17.1	2.3	1.0	60.0	0.6	0.1	0.4	362.0	0.7	0.1	0.1	1.0
Maximum		8.7	2480.0	8.0	0.0	110.0	134.2	1300.0	20.8	165.0	238.0	28.0	4.6	14.0	3800.0	0.6	4.2	991.0	28800.0	702.0	0.5	12.2	448.0
Mean		7.8	1999.8	7.6		73.4	77.9	1032.1	18.4	98.0	210.3	23.3	3.5	8.7	1530.4	0.6	1.2	95.6	4536.3	76.1	0.2	3.5	58.6
Standard Deviation		0.6	246.0	0.4		35.4	31.9	115.4	2.2	30.0	20.3	2.5	0.9	4.6	1746.7		1.5	272.5	7792.8	200.8	0.2	3.9	138.3
80th Percentile		8.2	2144.8	7.9		108.7	105.2	1108.0	20.3	120.0	221.8	24.9	4.5	12.0	3152.0	0.6	1.7	45.9	4966.0	38.7	0.3	5.5	8.2
RN022107 (Wet Season)																							
RN022107	12-Apr-08	9.0	2345	7.9			71	1,230	23	118	252	29	3	4	<200	<0.2	0	6	1,220	8.15	<0.2	0	3
RN022107	18-Mar-09	7.5	2219	7.5			99	1,230	21	105	261	27	3	2	<200	<0.2	1	1	3,080	1.27	0.18	0	6
RN022107	23-Apr-09	6.7	2377	7.3			165	1,240	16	164	247	19	4	364	<800	0.8	14	363	20,000	292.00	2.38	11	320
RN022107	8-Apr-09	6.0	2394				561	1,290		152	203			97	4000.0	4.8	1,340	4,190	42,900	3260.00	<0.1	13	2,200
RN022107	13-Apr-11	6.4	2154	7.0		76	93	1,070	15	146	188	14	3	58	9400.0	<0.2	0	1,690	31,500	1270.00	<0.1	3	476
RN022107	20-Jan-09	7.7	2481	7.9			115	1,280	23	131	290	31	3	3	<200	<0.02	1	1	2,130	1.17	<0.1	2	3
RN022107	22-Mar-12	7.4	2259			150	183	1,110	15	156	218	16	2	4	5030.0	<0.2	0	25	11,200	13.40	<0.1	1	7
RN022107	18-Feb-13	7.8	2185			58	71	1,080	20	113	215	24	3	52	88.0	<0.1	0	1	1,380	2.20	0.11	13	1
RN022107	6-Feb-14	7.9	2007			76	93	939	15	92	198	20	2	60	50.0	<0.1	189	68	993	55.20	0.84	2	117
RN022107	25-Mar-15	8.5	1785			30	36	841	15	80	169	22	2	17	<10	<0.1	0	1	406	0.79	<0.05	1	0
RN022107	14-Jan-10	6.8	1871	7.2			77	1,000	21	108	214	24	4	<10	<50	<0.1	1	2	2,250	9.00	<1	0	22
No. of samples		11.0	11.0	6.0	0.0	5.0	11.0	11.0	10.0	11.0	11.0	10.0	10.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Minimum		6.0	1784.8	7.0	0.0	29.8	36.4	841.0	15.0	79.9	169.0	14.1	1.6	2.4	50.0	0.8	0.1	0.6	406.0	0.8	0.1	0.1	0.4
Maximum		9.0	2481.0	7.9	0.0	150.0	560.7	1290.0	23.4	164.0	290.0	31.3	3.9	364.0	9400.0	4.8	1340.0	4190.0	42900.0	3260.0	2.4	13.2	2200.0
Mean		7.4	2188.8	7.5		78.0	142.1	1119.1	18.4	124.1	223.2	22.6	2.8	65.9	3713.6	2.8	140.6	577.0	10641.7	446.7	0.9	4.3	286.9
Standard Deviation		0.9	221.7	0.4		44.5	145.1	149.1	3.6	27.7	35.6	5.6	0.7	109.7	3896.1	2.8	401.8	1299.5	14615.1	1006.7	1.1	5.4	654.0
80th Percentile		7.9	2377.0	7.9		90.8	165.0	1240.0	21.5	152.0	252.0	27.3	3.5	67.0	5904.0	4.0	13.7	363.0	20000.0	292.0	1.5	11.3	320.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-48. Groundwater quality data, Old Tailings Dam area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-17 (Dry Season)																							
MB10-17	1-Dec-10	6.7	944				0	288	10	79	64	9	1	11	<200	<0.2	1	0.2	1,110	5.20	0.60	1	
MB10-17	2-Sep-11	7.0	979			131	160	265	10	74	61	8	0.3	8	<20	<0.2	17	0.4	939	3.41	<0.1	1	4
MB10-17	11-Oct-12	6.9	918			172	210	252	10	73	59	8	0.4	6	2.0	0.0	3	0.3	857	4.05	0.03	0	3
No. of samples		3.0	3.0	0.0	0.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Minimum		6.7	918.0	0.0	0.0	131.0	0.0	252.0	10.0	72.9	59.3	7.6	0.3	6.1	2.0	0.0	0.8	0.2	857.0	3.4	0.0	0.3	3.4
Maximum		7.0	979.0	0.0	0.0	172.0	209.8	288.0	10.0	78.7	63.6	8.9	0.5	11.0	2.0	0.0	16.5	0.4	1110.0	5.2	0.6	1.2	3.7
Mean		6.9	947.0			151.5	123.2	268.3	10.0	75.3	61.3	8.1	0.4	8.5	2.0	0.0	6.7	0.3	968.7	4.2	0.3	0.7	3.6
Standard Deviation		0.1	30.6			29.0	109.6	18.2	0.0	3.0	2.2	0.7	0.1	2.5			8.6	0.1	129.1	0.9	0.4	0.4	0.2
80th Percentile		6.9	965.0			163.8	189.8	278.8	10.0	76.9	62.5	8.5	0.5	9.9	2.0	0.0	11.0	0.3	1041.6	4.7	0.5	1.0	3.6

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

		EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic														300.0		1000		100				3000
ADWG 2015 Health															2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%													150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%													80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%													55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation													5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water		4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB10-17 (Wet Season)																						
MB10-17	30-Mar-11	6.9	853	7.8			0	242	10	72	60	8	0.3	7	<200	<0.2	0	0.4	784	4.40	0.50	1	3
MB10-8S (Dry Season)																						
MB10-8S	30-Nov-10	7.2	320			115		4	<5	28	17	2	0.3	26	<200	<0.2	1	1	12	1.40	0.60	1	
MB10-8S	9-Oct-12	7.0	252			115	192	1	<5	23	15	1	<0.1	6	4.0	<0.02	0	1	54	1.71	0.02	0	1
MB10-8S	25-Aug-11	7.1	267			90	192	1	<5	22	14	1	<0.1	12	2.0	<0.02	0	0.1	7	0.42	0.04	1	0.4
No. of samples		3.0	3.0	0.0	0.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Minimum		7.0	251.6	0.0	0.0	90.0	191.5	0.7	0.0	21.6	13.7	1.2	0.3	6.3	2.0	0.0	0.2	0.1	7.0	0.4	0.0	0.2	0.4
Maximum		7.2	319.8	0.0	0.0	115.2	191.5	4.1	0.0	28.1	16.7	1.9	0.3	26.0	4.0	0.0	1.1	1.0	53.5	1.7	0.6	1.0	1.3
Mean		7.1	279.6			106.7	191.5	2.0		24.4	15.2	1.5	0.3	14.9	3.0		0.6	0.6	24.0	1.2	0.2	0.6	0.9
Standard Deviation		0.1	35.7			14.5	0.0	1.8		3.4	1.5	0.4		10.1	1.4		0.5	0.5	25.6	0.7	0.3	0.4	0.6
80th Percentile		7.2	298.8			115.1	191.5	2.9		26.2	16.1	1.7	0.3	20.6	3.6		0.8	0.9	36.7	1.6	0.4	0.9	1.1

Red numbers indicate that the concentration was below the indicated detection limit

Table B-49. Groundwater quality data for Bores MB10-8S/D, Old Tailings Dam area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-8S (Wet Season)																							
MB10-8S	17-Feb-12	6.8	154			27	192	1	<5	13	9	1	<0.1	14	2.0	<0.02	1	0.3	3	0.56	0.07	0	3
MB10-8S	30-Mar-11	6.6	154	7.5		154		1	<5	13	8	1	<0.1	10	<200	<0.2	1	1	2	0.90	0.10	1	1
No. of samples		2.0	2.0	1.0	0.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		6.6	153.9	7.5	0.0	27.0	191.5	0.6	0.0	12.5	8.0	1.2	0.0	10.0	2.0	0.0	0.8	0.3	2.4	0.6	0.1	0.0	1.0
Maximum		6.8	154.3	7.5	0.0	154.0	191.5	0.6	0.0	12.6	8.5	1.3	0.0	14.0	2.0	0.0	1.1	0.5	3.2	0.9	0.1	0.9	2.8
Mean		6.7	154.1	7.5		90.5	191.5	0.6		12.6	8.3	1.3		12.0	2.0		0.9	0.4	2.8	0.7	0.1	0.5	1.9
Standard Deviation		0.1	0.3			89.8		0.0		0.1	0.4	0.1		2.8			0.2	0.1	0.6	0.2	0.0	0.6	1.3
80th Percentile		6.7	154.2	7.5		128.6	191.5	0.6		12.6	8.4	1.3		13.2	2.0		1.0	0.5	3.1	0.8	0.1	0.8	2.4
MB10-8D (Dry Season)																							
MB10-8D	1-Dec-10	7.5	374					29	<5	23	15	24	1	38	<200	<0.2		0.2	20	1.10	0.50		
MB10-8D	9-Oct-12	7.5	315			136	166	5	<5	19	15	11	3	14	82.0	<0.02	0	0.5	712	1.07	0.06	1	2
No. of samples		2.0	2.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0
Minimum		7.5	315.4	0.0	0.0	136.0	165.9	4.9	0.0	18.7	15.2	11.4	0.9	13.6	82.0	0.0	0.2	0.2	19.9	1.1	0.1	1.1	2.2
Maximum		7.5	373.8	0.0	0.0	136.0	165.9	29.1	0.0	22.6	15.2	23.8	2.7	38.0	82.0	0.0	0.2	0.5	712.0	1.1	0.5	1.1	2.2
Mean		7.5	344.6			136.0	165.9	17.0		20.7	15.2	17.6	1.8	25.8	82.0		0.2	0.3	366.0	1.1	0.3	1.1	2.2
Standard Deviation		0.0	41.3					17.1		2.8	0.0	8.8	1.3	17.3				0.2	489.4	0.0	0.3		
80th Percentile		7.5	362.1			136.0	165.9	24.3		21.8	15.2	21.3	2.3	33.1	82.0		0.2	0.4	573.6	1.1	0.4	1.1	2.2
MB10-8D (Wet Season)																							
MB10-8D	30-Mar-11	7.7	447	8.2				64	<5	23	17	30	1	22	<200	<0.2	1	1	888	0.90	0.40	4	2

Red numbers indicate that the concentration was below the indicated detection limit

Table B-50. Groundwater quality data for Selected MB14 Bores, Old Tailings Dam area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB14-18 (Dry Season)																							
MB14-18	4-Dec-14	7.3	617			246	300	19	<5	38	46	3	2	17	<20	<0.2	15	1	6	1.40	<0.1	1	2

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB14-18	26-Nov-15	7.3	594					18	<5	39	45	3	2	29	8.0	0.0	65	3	20	3.51	0.03	15	5
MB14-18	1-Dec-16	7.5	612																				
MB14-18	24-Oct-17	7.3	646	8.3				23	7	37	44	3	1	23	<2	<0.02	53	2	8	11.80	0.02	3	3
MB14-18	3-Dec-18	7.3	568	8.5				17	4	39	45	3	2	17	<2	<0.02	16	0	3	0.65	0.33	6	2
No. of samples		5.0	5.0	2.0	0.0	1.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.3	567.8	8.3	0.0	246.0	300.1	16.7	4.0	37.3	43.8	3.2	1.4	17.0	8.0	0.0	15.0	0.4	2.6	0.7	0.0	0.8	2.0
Maximum		7.5	646.2	8.5	0.0	246.0	300.1	22.5	6.5	38.9	45.5	3.4	1.7	28.5	8.0	0.0	64.6	3.2	19.7	11.8	0.3	14.6	5.0
Mean		7.3	607.6	8.4		246.0	300.1	19.1	5.3	38.3	44.9	3.3	1.5	21.4	8.0	0.0	37.0	1.6	9.0	4.3	0.1	6.2	3.1
Standard Deviation		0.1	29.0	0.1				2.4	1.8	0.7	0.8	0.1	0.1	5.4			25.4	1.4	7.4	5.1	0.2	6.0	1.4
80th Percentile		7.4	622.9	8.5		246.0	300.1	20.2	6.0	38.7	45.4	3.4	1.6	25.0	8.0	0.0	57.3	2.6	12.7	6.8	0.2	9.4	3.9
MB14-18 (Wet Season)																							
MB14-18	22-Apr-15	7.3	643			214	261	34	5	41	50	4	2	50	20.0	<0.02	20	0	10	1.40	0.05	11	2
MB14-18	5-Apr-16	7.4	645					32	<5	41	49	4	2	12	2.0	<0.02	41	0.3	4	1.74	0.06	11	2
MB14-18	22-Mar-17	7.5	600	8.1				30	4	41	48	4	2	12	4.0	<0.02	2	0.9	2	1.02	0.08	1	15
MB14-18	26-Mar-18	7.3	636	8.3				33	3	42	48	4		32	8.0	<0.02	15	0.1	10	0.86	0.04	1	22
No. of samples		4.0	4.0	2.0	0.0	1.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.3	600.1	8.1	0.0	214.0	261.1	29.5	3.4	40.7	48.2	3.6	1.5	11.9	2.0	0.0	2.2	0.1	1.9	0.9	0.0	0.9	1.7
Maximum		7.5	644.8	8.3	0.0	214.0	261.1	34.2	5.0	41.7	49.6	3.8	1.6	50.0	20.0	0.0	41.1	0.9	9.8	1.7	0.1	11.1	21.5
Mean		7.4	631.0	8.2		214.0	261.1	32.2	4.0	41.3	48.7	3.7	1.6	26.5	8.5		19.5	0.3	6.2	1.3	0.1	5.9	10.2
Standard Deviation		0.1	20.9	0.1				2.1	0.9	0.4	0.6	0.1	0.1	18.2	8.1		16.2	0.4	4.0	0.4	0.0	5.7	9.8
80th Percentile		7.4	643.8	8.3		214.0	261.1	33.7	4.4	41.5	48.9	3.7	1.6	39.1	12.8		28.4	0.5	9.6	1.5	0.1	10.8	17.8
MB14-19 (Dry Season)																							
MB14-19	4-Dec-14	6.9	1402			248	303	376	15	92	101	24	2	50	40.0	<0.2	58	5	117	6.50	<0.1	5	11
MB14-19	1-Dec-16	7.1	1262																				
MB14-19	24-Oct-17	6.9	1348	8.1				340	10	82	92	21	2	36	12.0	<0.02	17	6	116	92.80	0.32	2	17
MB14-19	3-Dec-18	7.0	1194	8.3				330	14	86	94	21	2	16	<2	0.0	42	1	74	0.77	1.16	51	13
No. of samples		4.0	4.0	2.0	0.0	1.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.9	1194.1	8.1	0.0	248.0	302.6	330.0	9.8	82.1	92.2	21.1	1.6	16.0	12.0	0.0	17.2	1.3	74.0	0.8	0.3	1.8	11.0
Maximum		7.1	1402.2	8.3	0.0	248.0	302.6	376.0	15.0	92.2	101.0	23.5	1.9	50.0	40.0	0.0	58.3	5.8	117.0	92.8	1.2	51.1	16.8
Mean		7.0	1301.7	8.2		248.0	302.6	348.7	12.9	86.9	95.8	22.0	1.8	33.9	26.0	0.0	39.1	4.0	102.3	33.4	0.7	19.3	13.7
Standard Deviation		0.1	92.1	0.1				24.2	2.8	5.1	4.6	1.3	0.2	17.1	19.8		20.7	2.4	24.5	51.6	0.6	27.6	2.9
80th Percentile		7.0	1369.9	8.3		248.0	302.6	361.6	14.6	89.9	98.3	22.6	1.9	44.3	34.4	0.0	51.7	5.4	116.6	58.3	1.0	32.6	15.4
MB14-19 (Wet Season)																							
MB14-19	22-Apr-15	7.0	1475			238	290	458	20	98	117	29	2	18	<2	0.1	156	3	99	5.04	0.09	59	16
MB14-19	5-Apr-16	7.0	1552					484	15	99	119	29	2	22	<20	<0.2	105	2	509	4.69	0.58	70	12
MB14-19	22-Mar-17	7.0	1301	7.8				426	16	92	109	27	2	14	26.0	<0.02	3	1	220	1.18	0.26	1	19
MB14-19	26-Mar-18	7.0	1469	8.1				469	16	97	117	27		25	2.0	<0.02	37	1	258	0.24	<0.01	2	13
No. of samples		4.0	4.0	2.0	0.0	1.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.0	1300.7	7.8	0.0	238.0	290.4	426.0	15.0	92.2	109.0	26.6	1.7	14.1	2.0	0.1	2.6	0.8	99.3	0.2	0.1	1.3	12.3
Maximum		7.0	1552.2	8.1	0.0	238.0	290.4	484.0	20.0	99.4	119.0	29.2	1.9	25.2	26.0	0.1	156.0	3.1	509.0	5.0	0.6	70.1	19.1
Mean		7.0	1449.2	8.0		238.0	290.4	459.3	16.9	96.6	115.5	27.9	1.8	19.8	14.0	0.1	75.1	1.7	271.6	2.8	0.3	33.1	15.0
Standard Deviation		0.0	106.0	0.2				24.6	2.2	3.2	4.4	1.3	0.1	4.8	17.0		68.7	1.1	172.1	2.4	0.2	36.4	3.2
80th Percentile		7.0	1505.6	8.0		238.0	290.4	475.0	17.8	98.8	117.8	29.0	1.9	23.2	21.2	0.1	125.4	2.4	358.4	4.8	0.5	63.1	17.2
MB14-09 (Dry Season)																							
MB14-09	3-Dec-14	6.6	1089			128	156	336	10	88	66	10	1	4	<20	<0.2	83	8	2,370	10.40	<0.1	8	21
MB14-09	25-Nov-15	6.6	1085			88		323	10	86	64	9	1	10	<2	0.3	141	12	2,450	12.20	<0.1	33	32

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB14-09	1-Dec-16	6.8	1034																				
MB14-09	24-Oct-17	6.5	1054	7.9				301	7	80	59	8	1	19	<2	0.1	20	3	2,220	15.30	<0.1	6	11
MB14-09	29-Nov-18	6.9	1006	8.1				318	10	86	64	9	1	33	2.0	0.2	76	9	2,270	10.00	0.48	173	13
No. of samples		5.0	5.0	2.0	0.0	2.0	1.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.5	1005.5	7.9	0.0	88.0	156.2	301.0	7.2	79.8	59.1	8.2	0.8	4.0	2.0	0.1	20.3	3.4	2220.0	10.0	0.5	6.1	10.8
Maximum		6.9	1088.8	8.1	0.0	128.0	156.2	336.0	10.0	88.2	65.9	10.0	1.0	32.6	2.0	0.3	141.0	11.8	2450.0	15.3	0.5	173.0	32.1
Mean		6.7	1053.5	8.0		108.0	156.2	319.5	9.3	85.0	63.3	9.1	0.9	16.4	2.0	0.2	80.0	8.1	2327.5	12.0	0.5	55.1	19.2
Standard Deviation		0.2	35.0	0.1		28.3		14.5	1.4	3.6	2.9	0.7	0.1	12.4		0.1	49.4	3.5	102.8	2.4		79.5	9.7
80th Percentile		6.8	1085.4	8.1		120.0	156.2	328.2	10.0	87.1	64.9	9.5	0.9	24.5	2.0	0.3	106.2	10.1	2402.0	13.4	0.5	89.1	25.4
MB14-09 (Wet Season)																							
MB14-09	22-Apr-15	6.7	996			134	163	329	10	87	65	9	1	12	<2	0.1	50	4	2,490	7.51	0.03	9	10
MB14-09	30-Mar-16	6.6	1003			134		317	10	83	63	9	1	9		0.1		4	2,390	7.87		7	12
MB14-09	23-Mar-17	6.8	1044	7.6				333		85	65	9	1	23	<2	0.1	6	4	2,410	7.30	0.03	7	11
MB14-09	27-Mar-18	6.6	1071	7.8				346	11	90	67	9		14	<2	0.1	15	3	2,500	6.92	<0.01	7	8
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0
Minimum		6.6	995.8	7.6	0.0	134.0	163.5	317.0	10.0	82.7	63.0	8.7	0.8	8.6	0.0	0.1	5.8	3.4	2390.0	6.9	0.0	6.8	7.5
Maximum		6.8	1071.3	7.8	0.0	134.0	163.5	346.0	10.7	89.8	67.1	9.2	0.9	22.8	0.0	0.1	49.9	3.8	2500.0	7.9	0.0	9.4	12.3
Mean		6.7	1028.6	7.7		134.0	163.5	331.3	10.2	86.1	65.2	9.0	0.9	14.2		0.1	23.5	3.5	2447.5	7.4	0.0	7.6	10.0
Standard Deviation		0.1	35.6	0.1		0.0		12.0	0.4	3.0	1.7	0.2	0.1	6.1		0.0	23.3	0.2	55.6	0.4	0.0	1.2	2.0
80th Percentile		6.7	1055.1	7.8		134.0	163.5	338.2	10.4	87.8	66.0	9.1	0.9	17.2		0.1	35.9	3.6	2494.0	7.7	0.0	8.1	11.2
MB14-07 (Wet Season)																							
MB14-07	31-Mar-15	6.7	718			98		199	5	59	43	5	1	15	<2	0.0	115	3	56	3.84	0.01	25	12
MB14-07	30-Mar-16	6.8	658			120		175		54	38	5	1	20	8.0			1	67	3.23	0.05	5	7
MB14-07	22-Mar-17	6.7	658	7.3				178	4	53	37	5	1	95	6.0	0.1	14	2	29	4.74	0.10	50	12
MB14-07	22-Mar-18	6.8	645	7.7				168	5	53	40	4		24	<2	<0.02	114	0	3	1.17	<0.01	6	6
No. of samples		4.0	4.0	4.0	0.0	4.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.7	645.0	7.3	0.0	98.0	0.0	168.0	4.3	52.7	37.1	4.3	0.6	15.2	6.0	0.0	14.0	0.4	3.1	1.2	0.0	5.0	5.9
Maximum		6.8	718.0	7.7	0.0	120.0	0.0	199.0	5.0	58.9	42.8	5.2	0.7	95.3	8.0	0.1	115.0	3.4	67.3	4.7	0.1	49.7	12.1
Mean		6.8	669.7	7.5		109.0		180.0	4.6	54.6	39.5	4.7	0.7	38.6	7.0	0.1	81.0	1.5	38.7	3.2	0.1	21.3	9.3
Standard Deviation		0.1	32.8	0.3		15.5		13.3	0.4	2.9	2.6	0.4	0.1	37.9	1.4	0.0	58.0	1.4	28.7	1.5	0.0	21.1	3.1
80th Percentile		6.8	682.0	7.6		115.6		186.4	4.8	55.8	41.4	5.0	0.7	52.3	7.6	0.1	114.6	2.4	60.4	4.2	0.1	34.8	11.9
MB14-07 (Dry Season)																							
MB14-07	3-Dec-14	6.8	852			98	120	217	10	64	52	7	1	5	<20	<0.2	174	22	126	15.20	<0.1	21	31
MB14-07	26-Nov-15	6.9	827		136			227	10	66	53	7	1	30	12.0	0.1	80	3	31	3.21	0.19	27	19
MB14-07	1-Dec-16	7.0	847																				
MB14-07	25-Oct-17	6.7	843	7.9				222	8	63	51	7	1	20	<2	0.0	49	1	12	1.26	0.02	11	6
MB14-07	3-Dec-18	6.9	817	8.2				235	14	69	56	8	1	15	<2	0.0	19	1	18	1.00	0.59	29	5
No. of samples		5.0	5.0	4.0	0.0	2.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.7	816.8	7.9	0.0	98.0	119.6	217.0	8.4	63.4	50.9	6.7	0.6	5.0	12.0	0.0	18.5	0.5	12.0	1.0	0.0	10.7	5.4
Maximum		7.0	851.8	8.2	0.0	136.0	119.6	235.0	14.0	68.8	56.1	7.5	0.9	30.4	12.0	0.1	174.0	22.3	126.0	15.2	0.6	29.4	31.0
Mean		6.8	837.2	8.1		117.0	119.6	225.3	10.6	65.6	53.0	7.1	0.7	17.6	12.0	0.1	80.4	6.7	46.9	5.2	0.3	21.9	15.3
Standard Deviation		0.1	14.7	0.2		26.9		7.7	2.4	2.5	2.3	0.4	0.1	10.6		0.1	67.2	10.5	53.4	6.8	0.3	8.3	12.1
80th Percentile		6.9	848.1	8.1		128.4	119.6	230.2	11.6	67.2	54.4	7.3	0.8	24.4	12.0	0.1	117.5	10.9	69.2	8.0	0.4	27.8	23.6
MB14-08S (Wet Season)																							
MB14-08S	22-Apr-15	7.2	521			42	51	93	<5	30	10	12	1	13	<2	0.2	79	27	752	68.80	0.02	6	31
MB14-08S	30-Mar-16	7.4	393			46		74		34	11	12	1	180	120.0		24	1	31	3.32	0.56	5	4

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
MB14-08S	12-Apr-17	6.8	305	7.4				69	1	29	8	7	1	52	<2	0.4	522	28	722	90.70	0.04	2	77
MB14-08S	23-Mar-18	6.7	297	7.5				67	1	31	8	4		25	4.0	0.3	485	27	710	88.40	<0.01	2	85
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.7	297.0	7.4	0.0	42.2	51.5	67.0	1.2	28.6	7.5	4.2	0.5	12.6	4.0	0.2	23.6	1.2	31.1	3.3	0.0	1.8	4.0
Maximum		7.4	521.1	7.5	0.0	46.0	51.5	93.3	1.2	33.9	11.0	12.1	0.5	180.0	120.0	0.4	522.0	27.8	752.0	90.7	0.6	6.3	84.5
Mean		7.0	379.0	7.5		44.1	51.5	75.9	1.2	30.9	9.1	8.9	0.5	67.3	62.0	0.3	277.4	20.7	553.8	62.8	0.2	3.7	49.1
Standard Deviation		0.3	104.2	0.1		2.7		12.0	0.0	2.2	1.7	3.8	0.0	76.9	82.0	0.1	262.5	13.1	348.9	40.9	0.3	2.3	38.3
80th Percentile		7.3	444.0	7.5		45.2	51.5	81.8	1.2	32.0	10.4	12.0	0.5	103.2	96.8	0.4	499.8	27.6	734.0	89.3	0.4	5.5	80.0
MB14-08D (Dry Season)																							
MB14-08D	3-Dec-14	7.0	958			102	124	237	10	83	52	11	1	8	<20	<0.2	31	4	117	5.40	0.10	18	7
MB14-08D	26-Nov-15	7.1	930					235	10	78	50	19	1	15	<2	0.1	52	3	215	2.32	0.03	31	7
MB14-08D	2-Dec-16	7.0	900																				
MB14-08D	25-Oct-17	6.9	856	8.0				218	10	68	50	8	1	17	<2	0.1	55	2	89	3.44	<0.01	15	7
MB14-08D	3-Dec-18	7.0	834	8.3				233	10	71	56	8	1	12	<2	0.0	12	0	66	1.37	0.36	15	3
No. of samples		5.0	5.0	2.0	0.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		6.9	834.5	8.0	0.0	102.0	124.4	218.0	9.8	67.7	49.7	7.5	0.7	8.0	0.0	0.0	11.5	0.4	66.3	1.4	0.0	15.3	2.6
Maximum		7.1	958.1	8.3	0.0	102.0	124.4	237.0	10.0	82.7	55.7	18.6	1.1	17.0	0.0	0.1	54.8	4.3	215.0	5.4	0.4	31.3	7.2
Mean		7.0	895.6	8.2		102.0	124.4	230.8	10.0	74.9	52.0	11.2	0.9	13.1		0.1	37.4	2.3	121.8	3.1	0.2	20.1	6.0
Standard Deviation		0.1	50.9	0.2				8.7	0.1	6.9	2.7	5.2	0.2	3.9		0.0	20.3	1.6	65.5	1.7	0.2	7.6	2.3
80th Percentile		7.0	935.2	8.2		102.0	124.4	235.8	10.0	80.1	53.5	14.2	1.0	15.7		0.1	53.3	3.3	156.2	4.2	0.3	23.6	7.1
MB14-08D (Wet Season)																							
MB14-08D	22-Apr-15	7.2	910			114	139	229	10	58	32	77	1	14	2.0	0.1	45	1	144	3.51	0.02	37	4
MB14-08D	30-Mar-16	7.1	698			146		169		58	33	21	1	13			12	1		2.19		15	3
MB14-08D	12-Apr-17	7.2	760	8.1				180	5	61	39	12	1	50	4.0	0.0	30	0	142	2.16	0.03	13	6
MB14-08D	23-Mar-18	7.1	667	8.1				161	4	60	37	8		29	<2	0.0	76	0	148	2.29	0.01	12	4
No. of samples		4.0	4.0	3.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.1	667.1	8.1	0.0	114.0	139.1	161.0	4.3	57.7	31.7	8.4	0.8	13.0	2.0	0.0	11.9	0.2	142.0	2.2	0.0	11.8	2.5
Maximum		7.2	909.8	8.1	0.0	146.0	139.1	229.0	10.0	61.4	39.0	76.7	1.2	49.8	4.0	0.1	75.8	1.4	148.0	3.5	0.0	37.1	5.7
Mean		7.2	758.8	8.1		130.0	139.1	184.8	6.3	59.3	35.2	29.7	0.9	26.3	3.0	0.0	40.8	0.6	144.7	2.5	0.0	19.1	4.0
Standard Deviation		0.1	107.9	0.0		22.6		30.5	3.2	1.7	3.3	31.8	0.2	17.3	1.4	0.0	27.0	0.5	3.1	0.7	0.0	12.1	1.3
80th Percentile		7.2	820.0	8.1		139.6	139.1	199.6	7.9	60.4	37.7	43.5	1.0	37.3	3.6	0.1	57.4	0.9	146.4	2.8	0.0	23.6	4.9

Red numbers indicate that the concentration was below the indicated detection limit

Table B-51. Groundwater quality data for Selected MB14 Bores, Old Tailings Dam area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB14-01D (Dry Season)																							
MB14-01D	1-Dec-14	7.1	639			128	156	133	5	43	44	5	1	7	<20	<0.2	4	0.2	48	1.10	<0.1	2	<1
MB14-01D	26-Nov-15	7.3	593			146		125	<5	41	41	4	1	17	<2	0.0	27	1	58	2.30	0.03	7	3
MB14-01D	2-Dec-16	7.3	621																				
MB14-01D	24-Oct-17	7.3	590	8.0				116	3	38	38	3	1	24	2.0	<0.02	6	0	9	0.46	0.04	4	4
MB14-01D	28-Nov-18	7.6	596	8.0				136	6	45	44	3		280	4.0	<0.02	21	0.4	3	1.51	0.32	2	9
No. of samples		5.0	5.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.1	589.8	8.0	0.0	128.0	156.2	116.0	2.8	37.8	37.5	2.8	0.5	7.0	2.0	0.0	3.7	0.2	3.2	0.5	0.0	1.5	3.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Maximum		7.6	638.9	8.0	0.0	146.0	156.2	136.0	6.0	44.5	43.9	5.3	0.6	280.0	4.0	0.0	26.6	1.2	57.6	2.3	0.3	7.2	8.9
Mean		7.3	607.8	8.0		137.0	156.2	127.5	4.6	41.6	41.5	3.7	0.6	82.1	3.0	0.0	14.5	0.5	29.6	1.3	0.1	3.5	5.2
Standard Deviation		0.2	21.4	0.0		12.7		9.0	1.6	3.0	3.0	1.1	0.1	132.2	1.4		11.3	0.5	27.3	0.8	0.2	2.6	3.2
80th Percentile		7.4	624.7	8.0		142.4	156.2	134.2	5.6	43.8	43.8	4.2	0.6	126.6	3.6	0.0	23.5	0.7	52.0	1.8	0.2	5.1	6.7
MB14-01D (Wet Season)																							
MB14-01D	23-Apr-15	7.4	563			124	151	109	5	37	37	3	0	20	<2	<0.02	0	0.1	2	0.14	0.25	1	1
MB14-01D	24-Mar-17	7.6	570	8.1				118	4	38	38	3	1	23	<2	<0.02	1	0.1	19	0.08	<0.01	2	1
MB14-01D	22-Mar-18	7.5	553	8.0				113	4	38	38	3		37	<2	<0.02	1	0.1	3	0.14	<0.01	2	2
No. of samples		3.0	3.0	2.0	0.0	1.0	1.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.4	553.0	8.0	0.0	124.0	151.3	109.0	3.8	37.1	37.3	2.9	0.4	20.2	0.0	0.0	0.2	0.1	2.2	0.1	0.3	1.1	1.0
Maximum		7.6	570.2	8.1	0.0	124.0	151.3	118.0	5.0	37.9	38.3	3.0	0.6	37.3	0.0	0.0	1.2	0.1	19.1	0.1	0.3	1.7	2.0
Mean		7.5	561.9	8.1		124.0	151.3	113.3	4.2	37.5	37.8	3.0	0.5	26.8			0.7	0.1	8.2	0.1	0.3	1.5	1.4
Standard Deviation		0.1	8.6	0.1				4.5	0.7	0.4	0.5	0.1	0.1	9.2			0.5	0.0	9.4	0.0		0.4	0.5
80th Percentile		7.5	567.2	8.1		124.0	151.3	116.0	4.5	37.7	38.1	3.0	0.6	31.5			1.0	0.1	12.9	0.1	0.3	1.7	1.7
MB14-01S (Dry Season)																							
MB14-01S	1-Dec-14	7.2	760			128	156	172	5	57	46	12	0.3	5	<20	<0.2	3	0.4	15	0.50	<0.1	3	<1
MB14-01S	26-Nov-15	7.3	672					131	<5	51	43	6	0.2	18	4.0	0.0	48	1.9	14	2.47	0.13	11	6
MB14-01S	2-Dec-16	7.2	646																				
MB14-01S	24-Oct-17	7.1	637	8.0				113	3	43	39	4	0.3	22	<2	0.0	19	0.6	2	1.06	0.02	13	4
MB14-01S	28-Nov-18	7.5	603	8.1				127	4	48	42	4	0.5	14	<2	0.0	29	0.6	1	2.44	0.50	3	10
No. of samples		5.0	5.0	2.0	0.0	1.0	1.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.1	603.4	8.0	0.0	128.0	156.2	113.0	2.9	43.2	39.2	3.9	0.2	5.0	4.0	0.0	3.2	0.4	1.1	0.5	0.0	2.6	3.9
Maximum		7.5	759.7	8.1	0.0	128.0	156.2	172.0	5.0	56.8	46.1	12.3	0.5	22.1	4.0	0.0	48.3	1.9	15.1	2.5	0.5	12.7	9.5
Mean		7.3	663.5	8.1		128.0	156.2	135.8	4.0	49.6	42.8	6.6	0.3	14.7	4.0	0.0	24.9	0.9	8.0	1.6	0.2	7.1	6.6
Standard Deviation		0.2	59.1	0.1				25.4	1.1	5.7	2.9	3.9	0.1	7.4		0.0	18.9	0.7	7.6	1.0	0.3	5.3	2.8
80th Percentile		7.3	689.7	8.1		128.0	156.2	147.4	4.6	53.2	44.5	8.6	0.4	19.8	4.0	0.0	36.8	1.1	14.4	2.5	0.4	11.5	8.2
MB14-01S (Wet Season)																							
MB14-01S	23-Apr-15	7.4	571					107	5	39	37	5	0.2	28	<2	0.0	1	0	4	0.23	0.69	1	1
MB14-01S	24-Mar-17	7.5	550	8.1				115	4	37	37	3	1	10	<2	<0.02	2	0	1	0.34	0.04	1	6
MB14-01S	21-Mar-18	7.4	530	8.0				109	4	36	35	3		73	<2	<0.02	2	2	3	1.45	<0.01	4	3
No. of samples		3.0	3.0	2.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.4	530.2	8.0	0.0	0.0	0.0	107.0	3.7	36.0	35.2	2.8	0.2	9.6	0.0	0.0	0.5	0.2	1.0	0.2	0.0	0.7	0.9
Maximum		7.5	570.7	8.1	0.0	0.0	0.0	115.0	5.0	39.2	36.5	4.7	0.5	72.5	0.0	0.0	2.2	1.7	3.9	1.5	0.7	4.2	6.4
Mean		7.4	550.3	8.1				110.3	4.2	37.5	36.1	3.5	0.4	36.6		0.0	1.6	0.7	2.6	0.7	0.4	2.1	3.3
Standard Deviation		0.1	20.2	0.1				4.2	0.7	1.6	0.8	1.0	0.2	32.4			1.0	0.8	1.5	0.7	0.5	1.8	2.8
80th Percentile		7.4	562.5	8.1				112.6	4.5	38.4	36.5	4.0	0.4	54.5		0.0	2.2	1.1	3.5	1.0	0.6	3.1	4.8
MB14-02S (Wet Season)																							
MB14-02S	2-Apr-15	6.0	288			25	30	96	<5	18	17	6	<0.1	10	<2	1.6	2,040	498	695	550.00	0.27	29	623
MB14-02S	31-Mar-16	5.8	269			25.6		85		11	16	2	0.2	16		1.8	2,930	582	888	625.00	0.24	67	719
MB14-02S	21-Mar-17	5.4	248	6.0				87	2	10	15	2	0.2	95	26.0	2.1	3,050	620	1,100	686.00	0.23	2	821
MB14-02S	22-Mar-18	5.3	111	6.2				84	2	9	15	2		71	8.0	1.9	3,900	609	1,120	656.00	0.19	5	824
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.3	110.6	6.0	0.0	24.8	30.3	83.5	1.5	8.6	14.6	1.5	0.2	10.3	8.0	1.6	2040.0	498.0	695.0	550.0	0.2	2.0	623.0
Maximum		6.0	288.4	6.2	0.0	25.6	30.3	95.7	2.0	17.5	17.2	5.6	0.2	95.4	26.0	2.1	3900.0	620.0	1120.0	686.0	0.3	66.9	824.0
Mean		5.6	229.1	6.1		25.2	30.3	87.7	1.8	11.8	15.7	2.7	0.2	48.1	17.0	1.8	2980.0	577.3	950.8	629.3	0.2	25.8	746.8
Standard Deviation		0.3	80.7	0.1		0.6		5.5	0.4	4.0	1.1	2.0	0.0	41.7	12.7	0.2	761.0	55.2	200.2	58.4	0.0	29.9	95.9

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
80th Percentile		5.9	276.9	6.2		25.4	30.3	90.4	1.9	13.7	16.2	3.5	0.2	80.6	22.4	1.9	3390.0	613.4	1108.0	668.0	0.3	44.2	822.2
MB14-02D (Dry Season)																							
MB14-02D	1-Dec-14	7.5	585			98	120	122	<5	36	42	6	0.4	9	<20	<0.2	3	1	14	1.80	<0.1	2	<1
MB14-02D	24-Nov-15	7.4	607			100		125	<5	37	43	3	0.5	8	0.1	0.1	59.3	17	18	32.10	26.10	1.8	19
MB14-02D	2-Dec-16	7.3	611																				
MB14-02D	24-Oct-17	7.4	608	8.1				124	5	37	41	3	0.3	18	0.1	0.1	127.0	16	7	49.80	50.30	4.1	38
MB14-02D	27-Nov-18	7.6	646	8.1				133	6	40	45	3	0.6	16	0.1	0.1	51.5	6	2	26.20	22.40	5.0	15
No. of samples		5.0	5.0	4.0	0.0	2.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.3	584.6	8.1	0.0	98.0	119.6	122.0	4.5	36.0	40.9	2.7	0.3	7.7	0.1	0.1	2.5	0.5	2.4	1.8	22.4	1.8	14.8
Maximum		7.6	646.1	8.1	0.0	100.0	119.6	133.0	6.0	40.1	44.5	5.7	0.6	17.9	0.1	0.1	127.0	17.3	17.9	49.8	50.3	5.0	37.7
Mean		7.4	611.4	8.1		99.0	119.6	126.0	5.3	37.4	42.7	3.6	0.5	12.6	0.1	0.1	60.1	9.9	10.4	27.5	32.9	3.2	23.9
Standard Deviation		0.1	22.1	0.0		1.4		4.8	1.1	1.9	1.5	1.4	0.1	5.0	0.0	0.0	51.2	8.1	7.1	19.8	15.2	1.5	12.2
80th Percentile		7.5	618.2	8.1		99.6	119.6	128.2	5.7	38.1	43.7	4.1	0.5	16.6	0.1	0.1	86.4	16.6	15.8	39.2	40.6	4.5	30.3
MB14-02D (Wet Season)																							
MB14-02D	2-Apr-15	7.2	501			80	98	105	5	28	31	3	0	14	2.0	0.4	369	121	134	142.00	0.10	22	150
MB14-02D	31-Mar-16	6.4	311			35		85		17	19	2	0.2	13	1.2	1.1	1,240.0	445	571	540.00	526.00	48.6	496
MB14-02D	21-Mar-17	6.5	314	6.9				88	2	20	21	2	0.1	75	1.2	1.2	690.0	484	598	592.00	576.00	1.7	538
MB14-02D	22-Mar-18	6.2	141	7.2				84	2	19	20	2		16	1.5	1.5	1,280.0	474	626	566.00	587.00	1.9	617
No. of samples		4.0	4.0	3.0	0.0	4.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.2	140.6	6.9	0.0	35.3	97.6	84.2	1.6	16.9	19.0	1.5	0.1	12.7	1.2	0.4	369.0	121.0	134.0	142.0	0.1	1.7	150.0
Maximum		7.2	500.5	7.2	0.0	80.0	97.6	105.0	5.0	28.0	30.8	2.9	0.2	74.6	2.0	1.5	1280.0	484.0	626.0	592.0	587.0	48.6	617.0
Mean		6.6	316.5	7.1		57.7	97.6	90.6	2.9	20.9	22.5	1.9	0.1	29.3	1.5	1.1	894.8	381.0	482.3	460.0	422.3	18.5	450.3
Standard Deviation		0.4	147.0	0.2		31.6		9.8	1.8	4.9	5.6	0.7	0.1	30.2	0.4	0.4	441.9	174.1	233.3	213.1	282.7	22.2	206.4
80th Percentile		6.7	388.5	7.1		71.1	97.6	94.9	3.8	23.1	24.7	2.2	0.2	39.1	1.7	1.3	1256.0	478.0	609.2	576.4	580.4	32.4	569.6
MB14-03 (Dry Season)																							
MB14-03	2-Dec-14	7.3	581			192	234	21	<5	35	40	10	2	12	<20	<0.2	5	0.3	133	0.90	0.20	2	4
MB14-03	25-Nov-15	7.3	598			196		11	<5	35	41	3	2	25	<2	0.1	97	7.8	8	6.16	0.06	63	9
MB14-03	1-Dec-16	7.3	569																				
MB14-03	23-Oct-17	7.3	558	8.1				12	3	33	39	2	1	47	12.0	<0.02	12	0.5	8	1.91	0.04	2	3
MB14-03	26-Nov-18	7.2	557	8.0				11	4	35	41	2	2	13	6.0	<0.02	1	0.1	3	0.67	0.48	1	2
No. of samples		5.0	5.0	2.0	0.0	2.0	1.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.2	557.0	8.0	0.0	192.0	234.2	10.9	2.5	32.9	38.6	2.3	1.3	12.0	6.0	0.1	1.2	0.1	2.7	0.7	0.0	0.6	1.6
Maximum		7.3	598.2	8.1	0.0	196.0	234.2	20.6	4.0	35.3	41.2	10.0	1.7	46.9	12.0	0.1	97.4	7.8	133.0	6.2	0.5	62.8	8.8
Mean		7.3	572.6	8.1		194.0	234.2	13.6	3.3	34.5	40.2	4.5	1.5	24.3	9.0	0.1	28.7	2.2	37.7	2.4	0.2	16.9	4.4
Standard Deviation		0.0	17.3	0.1		2.8		4.7	1.1	1.1	1.2	3.7	0.2	16.2	4.2		46.0	3.8	63.6	2.6	0.2	30.6	3.1
80th Percentile		7.3	584.6	8.1		195.2	234.2	15.3	3.7	35.2	41.1	5.9	1.6	33.6	10.8	0.1	45.9	3.4	57.7	3.6	0.3	26.5	5.9
MB14-03 (Wet Season)																							
MB14-03	23-Apr-15	7.4	556			198	242	16	<5	36	43	3	2	9	<2	<0.02	38	0.1	5	0.41	0.02	2	1
MB14-03	6-Apr-16	7.5	567			224		19	<5	35	41	3	2	24	<2	0.0	102	3.5	3	3.16	0.08	13	8
MB14-03	27-Mar-17	7.5	561	8.2				18	3	35	41	3	2	106	2.0	<0.02	10	0.3	1	0.46	0.06	5	5
MB14-03	21-Mar-18	7.4	548	7.8				16	3	35	42	2		15	<2	<0.02	5	0.2	2	0.54	<0.01	2	1
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.4	547.6	7.8	0.0	198.0	241.6	16.2	2.7	34.7	40.8	2.4	1.5	9.2	2.0	0.0	5.4	0.1	0.8	0.4	0.0	1.5	0.8
Maximum		7.5	566.6	8.2	0.0	224.0	241.6	18.7	2.8	36.1	42.6	3.1	1.6	106.0	2.0	0.0	102.0	3.5	5.1	3.2	0.1	12.9	7.7
Mean		7.5	557.8	8.0		211.0	241.6	17.4	2.8	35.4	41.7	2.8	1.6	38.6	2.0	0.0	38.7	1.0	2.8	1.1	0.1	5.4	3.5
Standard Deviation		0.1	8.1	0.3		18.4		1.3	0.1	0.6	0.8	0.3	0.1	45.4			44.6	1.7	1.9	1.3	0.0	5.2	3.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
80th Percentile		7.5	563.4	8.1		218.8	241.6	18.4	2.8	35.7	42.3	2.9	1.6	57.0	2.0	0.0	63.3	1.6	4.1	1.6	0.1	8.0	5.8
MB14-04 (Dry Season)																							
MB14-04	2-Dec-14	7.2	810			306	373	62	10	52	61	7	0.3	6	<20	<0.2	12	1	171	1.10	<0.1	3	1
MB14-04	25-Nov-15	7.3	784			262		86	<5	48	51	6	0.2	36	<2	0.2	152	30	51	17.20	0.070	170	17
MB14-04	1-Dec-16	7.3	721																				
MB14-04	23-Oct-17	7.2	778	8.0				84	4	49	50	6	0.1	25	<2	0.0	41	2	50	2.34	0.030	20	5
MB14-04	26-Nov-18	7.2	651	7.9				86	4	46	44	5	0.3	14	4.000	0.0	4	1	44	1.63	0.540	1	4
No. of samples		5.0	5.0	4.0	0.0	5.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum		7.2	651.1	7.9	0.0	262.0	373.3	62.4	4.0	45.6	43.5	5.3	0.1	6.0	4.0	0.0	3.6	0.5	43.5	1.1	0.0	1.4	1.0
Maximum		7.3	810.4	8.0	0.0	306.0	373.3	85.9	10.0	51.5	60.9	7.0	0.3	36.0	4.0	0.2	152.0	30.4	171.0	17.2	0.5	170.0	17.2
Mean		7.2	748.8	8.0		284.0	373.3	79.4	6.0	48.6	51.1	6.0	0.2	20.3	4.0	0.1	52.3	8.4	78.7	5.6	0.2	48.7	6.7
Standard Deviation		0.0	63.7	0.1		31.1		11.4	3.5	2.5	7.2	0.7	0.1	13.0		0.1	68.4	14.7	61.6	7.8	0.3	81.3	7.2
80th Percentile		7.3	789.3	8.0		297.2	373.3	85.9	7.6	50.2	54.7	6.3	0.3	29.3	4.0	0.1	85.6	13.2	98.8	8.3	0.4	80.2	9.8
MB14-04 (Wet Season)																							
MB14-04	23-Apr-15	7.6	540			60	73	113	<5	39	32	4	0.2	21	2.000	0.0	18	0	9	1.07	0.070	5	4
MB14-04	6-Apr-16	7.5	631			184		68	<5	43	41	5	0.3	28	4.000	0.1	166	21	41	15.00	0.100	59	21
MB14-04	27-Mar-17	7.5	646	8.2				44	3	46	45	4	0.3	116	10.000	<0.02	14	1	45	1.64	0.240	13	17
MB14-04	21-Mar-18	7.3	685	7.8				50	3	47	47	4		26	<2	<0.02	6	0	47	0.99	<0.01	2	2
No. of samples		4.0	4.0	3.0	0.0	4.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.3	540.1	7.8	0.0	60.0	73.2	44.0	3.2	38.7	31.5	4.3	0.2	21.2	2.0	0.0	5.6	0.3	9.0	1.0	0.1	2.3	1.7
Maximum		7.6	684.7	8.2	0.0	184.0	73.2	113.0	3.3	47.2	47.4	4.5	0.3	116.0	10.0	0.1	166.0	21.3	47.4	15.0	0.2	59.1	20.7
Mean		7.5	625.3	8.0		122.0	73.2	68.8	3.3	43.9	41.1	4.4	0.3	47.7	5.3	0.1	51.0	5.6	35.4	4.7	0.1	19.6	10.9
Standard Deviation		0.1	61.2	0.3		87.7		31.1	0.1	3.9	7.0	0.1	0.1	45.6	4.2	0.1	76.9	10.4	17.9	6.9	0.1	26.7	9.2
80th Percentile		7.5	661.4	8.1		159.2	73.2	85.8	3.3	46.7	45.8	4.4	0.3	63.0	7.6	0.1	77.4	8.9	45.8	7.0	0.2	31.2	18.2
MB14-05D (Dry Season)																							
MB14-05D	2-Dec-14	7.3	556			111	135	101	<5	35	38	3	0.2	14	<20	<0.2	5	0.2	46	0.90	<0.1	1	<1
MB14-05D	24-Nov-15	7.5	554			128	104	<5	0	38	2	0	22	4	0.0	22.3	2	10	3	0.14	2.93	9	
MB14-05D	1-Dec-16	7.4	536				0																
MB14-05D	20-Oct-17	7.3	542	7.9			104	3	0	37	2	<0.1	45	<2	0.1	43.5	4	4	6	0.01	58.00	7	
MB14-05D	27-Nov-18	8.8	516	8.0				115	4	0	41	2	0	28	6.0	0.0	9	0	1	2.68	0.18	31	3
No. of samples		5.0	5.0	2.0	0.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
Minimum		7.3	515.9	7.9	0.0	110.7	0.0	2.8	0.0	0.0	1.8	0.1	0.2	4.0	0.0	0.0	2.1	0.1	1.4	0.0	0.2	1.3	2.6
Maximum		8.8	556.4	8.0	0.0	128.0	135.0	115.0	4.0	38.0	40.7	2.5	45.1	28.3	6.0	43.5	8.8	9.8	46.3	2.7	58.0	31.1	2.6
Mean		7.6	540.7	8.0		119.3	85.8	72.9	1.4	27.4	20.6	1.5	16.8	15.4	2.0	21.9	4.8	3.4	14.1	0.9	20.4	12.0	2.6
Standard Deviation		0.7	16.2	0.1		12.3	59.0	61.1	2.3	18.3	21.7	1.2	21.4	12.2	3.4	21.7	2.9	4.5	21.5	1.2	32.6	13.1	
80th Percentile		7.7	554.1	8.0		124.5	116.4	109.4	2.4	37.3	39.1	2.3	31.0	22.6	3.6	35.0	6.3	6.1	22.0	1.6	36.0	17.6	2.6
MB14-05D (Wet Season)																							
MB14-05D	21-Apr-15	7.5	570			88	107	103	<5	34	40	3	0	17	<2	<0.02	36	1	3	0.71	0.02	24	2
MB14-05D	1-Apr-16	6.8	587			110	140		0	34	2	0	44	6	0.2	120.0	1	5	38		135.00	18	
MB14-05D	22-Mar-17	7.0	558	7.5			122	2	0	34	2	0	121	6	0.1	31.7	1	9	26	0.06	148.00	15	
MB14-05D	22-Mar-18	7.1	510	7.5			119	3	0	36	2		43.5	<2	0.1	98.2	2	16	27	<0.01	156.00	20	
No. of samples		4.0	4.0	2.0	0.0	2.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	1.0
Minimum		6.8	509.5	7.5	0.0	88.0	107.4	2.4	0.1	34.0	2.1	0.2	0.1	6.0	0.1	31.7	1.0	0.6	3.2	0.1	0.0	15.3	1.8
Maximum		7.5	586.6	7.5	0.0	110.0	140.0	103.0	0.2	36.2	39.9	2.7	121.0	17.1	0.2	120.0	36.4	16.1	38.3	0.7	156.0	23.8	1.8
Mean		7.1	556.1	7.5		99.0	122.1	36.0	0.1	34.6	11.6	1.0	52.1	9.7	0.1	83.3	10.1	7.5	23.4	0.4	109.8	19.3	1.8
Standard Deviation		0.3	33.2	0.0		15.6	13.5	58.1	0.0	1.1	18.9	1.4	50.3	6.4	0.0	46.0	17.6	6.6	14.7	0.5	73.7	3.5	

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
80th Percentile		7.2	576.8	7.5		105.6	129.2	62.8	0.2	35.0	17.3	1.7	74.7	12.7	0.2	111.3	15.6	11.6	31.3	0.6	151.2	21.4	1.8
MB14-06S (Wet Season)																							
MB14-06S	2-Apr-15	6.5	225			40	49	53	<5	8	17	2	<0.1	10	2.0	0.1	134	5	69	6.79	0.04	10	64
MB14-06S	4-Apr-16	6.0	237			21		71	<5	3	20	2	<0.1	7	4.0	0.0	119	1	13	1.83	0.04	4	8
MB14-06S	11-Apr-17	6.2	180	7.0				43	2	5	15	2	0	57	8.0	0.0	20	1	26	2.48	0.04	1	14
MB14-06S	28-Mar-18	5.9	163	6.6				45	1	2	14	2		14	38.0	<0.02	7	0	6	0.72	0.02	0	3
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.9	163.4	6.6	0.0	20.8	48.8	43.1	1.4	1.7	14.3	1.6	0.3	6.8	2.0	0.0	6.6	0.1	6.2	0.7	0.0	0.1	3.3
Maximum		6.5	237.4	7.0	0.0	40.0	48.8	71.0	1.6	8.2	20.4	2.0	0.3	56.8	38.0	0.1	134.0	5.0	68.9	6.8	0.0	10.3	63.9
Mean		6.1	201.6	6.8		30.4	48.8	53.0	1.5	4.5	16.4	1.8	0.3	22.1	13.0	0.1	70.0	1.7	28.5	3.0	0.0	3.9	22.1
Standard Deviation		0.3	35.4	0.3		13.6		12.8	0.1	2.8	2.8	0.2		23.4	16.9	0.0	65.8	2.2	28.2	2.7	0.0	4.6	28.2
80th Percentile		6.3	230.2	6.9		36.2	48.8	60.4	1.6	6.2	18.1	1.9	0.3	31.3	20.0	0.1	125.0	2.6	43.3	4.2	0.0	6.6	33.7
MB14-06D (Dry Season)																							
MB14-06D	4-Dec-14	7.6	378			86	105	44	<5	28	18	4	4	41	<20	<0.2	7	18	20	8.00	<0.1	3	2
MB14-06D	24-Nov-15	7.6	369			85		43	<5	30	19	2	4	14	2.0	0.0	25	4	22	3.83	0.03	3	7
MB14-06D	30-Nov-16	7.5	377																				
MB14-06D	19-Oct-17	7.5	372	7.9				50	4	28	20	2	4	31	2.0	0.0	48	11	10	7.41	0.02	8	10
MB14-06D	28-Nov-18	7.8	354	8.0				48	4	30	21	2	4	16	4.0	<0.02	10	1	1	1.36	0.19	0	2
No. of samples		5.0	5.0	2.0	0.0	2.0	1.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.5	354.0	7.9	0.0	85.3	104.9	43.0	3.7	27.8	18.4	1.6	3.6	13.8	2.0	0.0	6.8	0.7	1.2	1.4	0.0	0.4	2.0
Maximum		7.8	378.4	8.0	0.0	86.0	104.9	50.1	4.0	29.8	20.6	4.3	4.4	41.0	4.0	0.0	47.9	18.3	22.2	8.0	0.2	7.8	10.4
Mean		7.6	370.0	8.0		85.7	104.9	46.2	3.9	28.8	19.3	2.3	4.0	25.5	2.7	0.0	22.3	8.4	13.3	5.2	0.1	3.7	5.3
Standard Deviation		0.1	9.8	0.1		0.5		3.4	0.2	1.0	1.0	1.3	0.3	12.9	1.2	0.0	18.8	7.8	9.7	3.1	0.1	3.1	3.9
80th Percentile		7.6	377.4	8.0		85.9	104.9	48.9	3.9	29.6	20.0	2.7	4.2	35.1	3.2	0.0	34.0	13.8	20.9	7.6	0.1	5.1	8.1
MB14-06D (Wet Season)																							
MB14-06D	2-Apr-15	7.5	328			94	115	44	<5	28	19	2	4	29	<2	<0.02	28	0	2	1.10	0.03	22	3
MB14-06D	4-Apr-16	7.2	364			82		54	<5	26	21	2	3	17	<2	<0.02	28	0	8	0.62	0.01	8	1
MB14-06D	11-Apr-17	7.6	349	8.1				46	4	28	20	2	4	72	<2	<0.02	5	0	1	0.24	0.03	7	3
MB14-06D	28-Mar-18	7.4	350	7.9				49	4	27	21	2		18	<2	<0.02	2	0	2	0.36	<0.01	1	1
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.2	328.1	7.9	0.0	82.0	114.7	43.5	3.6	25.6	18.9	1.7	3.2	17.3	0.0	0.0	2.0	0.1	1.3	0.2	0.0	1.0	0.7
Maximum		7.6	363.6	8.1	0.0	94.0	114.7	53.6	4.0	28.4	20.6	2.2	3.9	71.9	0.0	0.0	28.3	0.5	7.5	1.1	0.0	22.1	3.2
Mean		7.4	347.9	8.0		88.0	114.7	48.0	3.8	27.3	20.0	2.0	3.7	34.0			15.6	0.3	3.3	0.6	0.0	9.6	2.0
Standard Deviation		0.1	14.7	0.1		8.5		4.4	0.3	1.4	0.8	0.2	0.4	25.8			14.4	0.2	2.9	0.4	0.0	8.9	1.3
80th Percentile		7.5	355.7	8.1		91.6	114.7	51.1	3.9	28.4	20.5	2.1	3.9	45.9			28.0	0.4	4.5	0.8	0.0	13.8	3.1
MB14-10 (Wet Season)																							
MB14-10	22-Apr-15	6.7	1055			142	173	351	10	100	66	10	1	11	<2	0.0	73	1	88	1.87	0.03	12	9
MB14-10	30-Mar-16	6.6	1061			136		345	10	97	64	10		13	6.0	0.1	36	1	43	1.78	0.03	5	14
MB14-10	23-Mar-17	6.7	1099	7.6				347	10	97	65	9	1	14	4.0	<0.02	12	1	90	1.90	0.03	0	6
MB14-10	27-Mar-18	6.7	1098	7.8				352	10	99	66	9		18	<2	<0.02	24	0	128	0.80	<0.01	1	4
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.6	1054.9	7.6	0.0	136.0	172.8	345.0	10.0	96.5	64.3	9.4	0.6	10.9	4.0	0.0	12.4	0.1	42.9	0.8	0.0	0.4	4.1
Maximum		6.7	1098.7	7.8	0.0	141.6	172.8	352.0	10.3	100.0	66.2	9.7	0.7	17.5	6.0	0.1	72.8	1.0	128.0	1.9	0.0	12.1	13.9
Mean		6.7	1078.1	7.7		138.8	172.8	348.8	10.1	98.3	65.3	9.6	0.7	13.8	5.0	0.1	36.5	0.7	87.3	1.6	0.0	4.4	8.3
Standard Deviation		0.1	23.4	0.1		4.0		3.3	0.2	1.7	0.8	0.2	0.1	2.8	1.4	0.0	26.1	0.4	34.8	0.5	0.0	5.5	4.3
80th Percentile		6.7	1098.2	7.8		140.5	172.8	351.4	10.2	99.6	66.0	9.7	0.7	15.2	5.6	0.1	51.0	1.0	105.0	1.9	0.0	7.7	11.1

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)										Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic														300.0		1000		100				3000
ADWG 2015 Health															2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%													150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%													80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%													55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation													5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500										5000		10.0	400	1000		1000.00	100.00	200	20000
MB14-10 (Dry Season)																						
MB14-10	24-Oct-17	6.5	1568	7.8			584	7	140	92	12	1	16	<2	<0.02	7	0	64	1.81	0.02	1	6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-52. Groundwater quality data for Selected MB14 Bores, Old Tailings Dam area

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB14-13S (Wet Season)																						
MB14-13S	23-Apr-15	6.3	227			45	55	44	<5	14	13	2	<0.1	76	48.0	0.0	28	1	14	4.22	0.09	1	9
MB14-13S	7-Apr-16	6.2	180			28		44	<5	10	12	2	<0.1	11	6.0	10.0	21	7	13	11.00	0.02	3	22
MB14-13S	11-Apr-17	5.8	121	6.7				34	2	6	7	2	<0.1	64	12.0	6.2	53	2	3	18.80	0.04	1	22
MB14-13S	21-Mar-18	5.7	133	6.2		26		33	2	6	7	2		25	4.0	6.2	27	2	2	10.20	0.02	0	17
No. of samples		4.0	4.0	2.0	0.0	3.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.7	121.4	6.2	0.0	25.8	55.1	33.1	1.9	6.2	7.2	1.7	0.0	11.4	4.0	0.0	20.9	0.9	2.3	4.2	0.0	0.5	9.3
Maximum		6.3	226.7	6.7	0.0	45.2	55.1	44.0	1.9	13.6	13.2	2.2	0.0	75.9	48.0	10.0	53.2	7.4	13.7	18.8	0.1	2.8	22.4
Mean		6.0	165.2	6.5		32.9	55.1	38.6	1.9	9.0	9.9	1.9		44.0	17.5	5.6	32.3	3.1	7.9	11.1	0.0	1.1	17.6
Standard Deviation		0.3	48.0	0.4		10.7		6.0	0.0	3.6	3.1	0.2		30.8	20.6	4.1	14.3	2.9	6.1	6.0	0.0	1.1	6.1
80th Percentile		6.2	198.4	6.6		38.2	55.1	43.8	1.9	11.4	12.4	2.1		68.7	26.4	7.7	38.0	4.4	13.0	14.1	0.1	1.6	22.2
MB14-13D (Dry Season)																						
MB14-13D	2-Dec-14	7.0	421			80	98	74	<5	34	20	4	0.2	5	<20	<0.2	4	0.2	16	0.60	<0.1	1	<1
MB14-13D	26-Nov-15	7.0	576			142		175	<5	0	38	9	0.6	23	4.0	0.1	40	1.3	5	1.45	0.06	9	5
MB14-13D	1-Dec-16	7.1	425																				
MB14-13D	23-Oct-17	6.9	428	7.7		145		72	2	0	21	2	0.3	15	<2	0.1	24	4.3	12	5.16	0.03	29	8
MB14-13D	26-Nov-18	7.0	579	7.7				133	<5	0	32	3	0.5	12	4.0	0.0	1	0.1	3	2.18	0.20	1	3
No. of samples		5.0	5.0	2.0	0.0	3.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.9	421.3	7.7	0.0	80.0	97.6	72.1	2.2	0.0	20.4	2.3	0.2	5.0	4.0	0.0	1.2	0.1	2.7	0.6	0.0	0.7	3.1
Maximum		7.1	578.9	7.7	0.0	145.0	97.6	175.0	2.2	34.4	37.5	8.8	0.6	22.5	4.0	0.1	40.4	4.3	15.7	5.2	0.2	29.3	8.4
Mean		7.0	486.0	7.7		122.3	97.6	113.6	2.2	8.6	27.7	4.4	0.4	13.7	4.0	0.0	17.3	1.5	8.8	2.3	0.1	10.1	5.6
Standard Deviation		0.0	83.5	0.0		36.7		49.7		17.2	8.5	3.0	0.2	7.2	0.0	0.0	18.5	1.9	6.0	2.0	0.1	13.5	2.7
80th Percentile		7.0	576.5	7.7		143.8	97.6	149.8	2.2	13.8	34.3	5.8	0.5	18.0	4.0	0.1	30.4	2.5	13.4	3.4	0.1	17.4	7.2
MB14-13D (Wet Season)																						
MB14-13D	23-Apr-15	6.9	284			65	80	44	<5	23	14	3	0.1	8	<2	<0.02	20	0.3	4	0.83	0.02	3	2
MB14-13D	7-Apr-16	6.8	267			64		43	<5	0	15	3	0.2	16	<2	0.0	6	1.1	3	2.84	0.01	1	4
MB14-13D	11-Apr-17	6.5	186	7.7				39	<5	<0.02	11	3	0.3	216	46.0	<0.02	1	0.1	6	1.06	0.38	0	7
MB14-13D	21-Mar-18	6.1	171	6.7		94		35	2	<0.02	9	2		27	<2	<0.02	3	0.3	4	3.78	0.02	0	9
No. of samples		4.0	4.0	2.0	0.0	3.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.1	170.6	6.7	0.0	64.0	79.8	35.3	2.2	0.0	8.8	1.8	0.1	7.8	46.0	0.0	0.7	0.1	2.6	0.8	0.0	0.2	2.1
Maximum		6.9	283.9	7.7	0.0	94.0	79.8	44.1	2.2	22.6	14.5	3.3	0.3	216.0	46.0	0.0	20.0	1.1	6.2	3.8	0.4	2.8	9.1
Mean		6.6	227.0	7.2		74.5	79.8	40.5	2.2	11.3	12.1	2.7	0.2	66.8	46.0	0.0	7.6	0.4	4.3	2.1	0.1	1.1	5.6
Standard Deviation		0.4	56.9	0.7		16.9		4.0		16.0	2.6	0.6	0.1	99.8			8.6	0.4	1.5	1.4	0.2	1.2	3.0
80th Percentile		6.9	273.9	7.5		82.6	79.8	43.4	2.2	18.1	14.1	3.0	0.3	102.8	46.0	0.0	11.9	0.6	5.2	3.2	0.2	1.8	7.6
MB14-14D (Dry Season)																						
MB14-14D	2-Dec-14	7.2	1859			130	159	786	15	168	121	32	10	8	<20	<0.2	8	0.4	20	2.90	0.20	6	1
MB14-14D	25-Nov-15	7.1	1966			96		839	10	186	133	6	9	17	<2	0.2	84	7	57	5.30	0.09	59	17
MB14-14D	1-Dec-16	7.0	1741																				

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water				4500										5000		10.0	400	1000		1000.00	100.00	200	20000
MB14-14D	18-Oct-17		7.0	1872	7.6		122		885	10	197	139	4	8	52	<2	0.0	19	5	41	3.33	0.07	141	4
MB14-14D	28-Nov-18		7.4	1901	7.9				916	12	206	147	4	9	13	<2	0.0	26	1	43	1.17	0.67	2	9
No. of samples			5.0	5.0	2.0	0.0	3.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum			7.0	1740.6	7.6	0.0	96.0	158.6	786.0	9.8	168.0	121.0	4.1	8.0	8.0	0.0	0.0	7.9	0.4	19.9	1.2	0.1	2.5	1.0
Maximum			7.4	1965.7	7.9	0.0	130.0	158.6	916.0	15.0	206.0	147.0	32.1	9.7	51.6	0.0	0.2	83.8	7.0	57.0	5.3	0.7	141.0	17.4
Mean			7.1	1867.6	7.8		116.0	158.6	856.5	11.7	189.3	135.0	11.7	8.8	22.3		0.1	34.0	3.2	40.1	3.2	0.3	52.0	7.8
Standard Deviation			0.1	82.1	0.2		17.8		56.7	2.4	16.4	11.0	13.6	0.7	19.9		0.1	34.0	3.3	15.3	1.7	0.3	64.7	7.2
80th Percentile			7.2	1913.8	7.8		126.8	158.6	897.4	13.2	200.6	142.2	16.5	9.1	30.7		0.1	48.9	5.6	48.5	4.1	0.4	91.8	12.3
MB14-14D (Wet Season)																								
MB14-14D	4-Apr-16		7.1	1907			152		861	10	188	137	5	8	18	<20	<0.2	67	1	44	3.03	<0.1	59	7
MB14-14D	23-Mar-17		7.2	2023	7.8				917	11	206	144	5	9	102	2.0	0.1	11	1	49	1.07	0.06	41	7
MB14-14D	22-Mar-18		7.0	1762	7.6		136		822	9	181	130	5		47	<10	<0.1	6	1	39	0.78	<0.05	11	3
No. of samples			3.0	3.0	2.0	0.0	2.0	0.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum			7.0	1762.1	7.6	0.0	136.0	0.0	822.0	9.0	181.0	130.0	4.9	8.4	17.8	2.0	0.1	5.6	0.5	39.3	0.8	0.1	11.3	3.4
Maximum			7.2	2022.5	7.8	0.0	152.0	0.0	917.0	11.2	206.0	144.0	5.3	8.9	102.0	2.0	0.1	66.8	0.7	49.2	3.0	0.1	59.2	6.7
Mean			7.1	1897.1	7.7		144.0		866.7	10.1	191.7	137.0	5.1	8.7	55.7	2.0	0.1	27.9	0.6	44.2	1.6	0.1	37.0	5.6
Standard Deviation			0.1	130.5	0.1		11.3		47.8	1.1	12.9	7.0	0.2	0.4	42.7			33.8	0.1	5.0	1.2		24.1	1.9
80th Percentile			7.2	1976.2	7.8		148.8		894.6	10.7	198.8	141.2	5.2	8.8	80.1	2.0	0.1	44.6	0.6	47.2	2.2	0.1	51.7	6.7
MB14-14S (Wet Season)																								
MB14-14S	4-Apr-16		5.8	269			21		81	<5	19	13	2	0	11	<2	0.2	506	4	7	7.50	0.1	37	39
MB14-14S	23-Mar-17		5.8	294	6.6				91	2	21	15	2	<0.1	75	8.0	0.2	64	1	5	2.23	0.1	4	32
MB14-14S	22-Mar-18		5.7	626	6.3				267	2	54	40	2		57	6.0	<0.02	30	0	4	1.50	0.0	10	3
No. of samples			3.0	3.0	3.0	0.0	1.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum			5.7	268.5	6.3	0.0	20.6	0.0	80.8	1.5	18.7	13.2	1.8	0.1	10.5	6.0	0.2	30.4	0.3	3.7	1.5	0.0	3.7	3.3
Maximum			5.8	626.1	6.6	0.0	20.6	0.0	267.0	1.7	53.6	39.5	2.0	0.1	75.2	8.0	0.2	506.0	3.7	7.4	7.5	0.1	37.0	38.9
Mean			5.8	396.2	6.5		20.6		146.3	1.6	31.0	22.5	1.9	0.1	47.7	7.0	0.2	200.0	1.8	5.3	3.7	0.1	17.0	24.7
Standard Deviation			0.1	199.4	0.2				104.6	0.1	19.6	14.8	0.1		33.4	1.4	0.0	265.5	1.8	1.9	3.3	0.0	17.6	18.8
80th Percentile			5.8	493.3	6.5		20.6		196.7	1.7	40.4	29.6	1.9	0.1	68.0	7.6	0.2	329.0	2.7	6.4	5.4	0.1	26.3	36.1
MB14-15S (Wet Season)																								
MB14-15S	1-Apr-15		6.1	195			33	40	35	<5	4	14	4	0.3	11	4.0	0.5	533	156	330	107.00	0.37	726	155
MB14-15S	29-Mar-16		6.3	283			106		46		4	19	15	1	6	10.0		61	29	242	33.40	0.04	5	61
MB14-15S	23-Mar-17		6.2	375	6.9				68	11	4	27	23	0	75	16.0	0.2	33	35	259	26.60	0.09	13	40
MB14-15S	26-Mar-18		6.3	382	6.9				65	13	3	31	13		26	24.0	0.2	119	27	202	18.60	0.02	11	149
No. of samples			4.0	4.0	2.0	0.0	2.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum			6.1	195.4	6.9	0.0	33.0	40.3	35.2	10.7	3.4	14.0	4.4	0.3	6.1	4.0	0.2	32.8	26.8	202.0	18.6	0.0	5.4	39.8
Maximum			6.3	382.1	6.9	0.0	106.0	40.3	68.3	12.9	4.1	30.7	23.1	0.5	75.3	24.0	0.5	533.0	156.0	330.0	107.0	0.4	726.0	155.0
Mean			6.2	308.9	6.9		69.5	40.3	53.6	11.8	3.8	22.7	13.9	0.4	29.5	13.5	0.3	186.5	61.8	258.3	46.4	0.1	188.8	101.1
Standard Deviation			0.1	88.2	0.0		51.6		15.7	1.6	0.3	7.6	7.7	0.1	31.7	8.5	0.2	233.8	62.9	53.5	40.9	0.2	358.2	59.4
80th Percentile			6.3	378.0	6.9		91.4	40.3	66.3	12.5	4.1	28.5	18.2	0.4	45.7	19.2	0.4	284.6	83.5	287.4	62.8	0.2	298.1	151.4
MB14-15S (Dry Season)																								
MB14-15S	17-Oct-17		6.8	386	7.0				49	11	5	34	6	0.1	32	8.0	<0.02	3	2	315	3.07	0.09	0	12
MB14-15S	29-Nov-18		7.0	316	7.6				47	14	7	30	4	0.4	13	8.0	0.0	18	2	120	3.59	0.08	0	20
No. of samples			2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum			6.8	316.1	7.0	0.0	0.0	0.0	47.1	11.0	4.6	29.5	4.2	0.1	12.6	8.0	0.0	3.4	2.0	120.0	3.1	0.1	0.1	11.8
Maximum			7.0	386.1	7.6	0.0	0.0	0.0	48.6	14.0	6.8	33.5	6.2	0.4	32.1	8.0	0.0	18.4	2.4	315.0	3.6	0.1	0.3	20.3

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Mean		6.9	351.1	7.3				47.9	12.5	5.7	31.5	5.2	0.3	22.4	8.0	0.0	10.9	2.2	217.5	3.3	0.1	0.2	16.1
Standard Deviation		0.2	49.5	0.4				1.1	2.1	1.6	2.8	1.4	0.2	13.8	0.0		10.6	0.3	137.9	0.4	0.0	0.1	6.0
80th Percentile		7.0	372.1	7.5				48.3	13.4	6.4	32.7	5.8	0.3	28.2	8.0	0.0	15.4	2.3	276.0	3.5	0.1	0.3	18.6
MB14-15D (Dry Season)																							
MB14-15D	3-Dec-14	6.9	1773			224	273	604	20	76	165	38	2	14	<20	<0.2	16	20	129	11.60	0.20	7	21
MB14-15D	23-Nov-15	7.0	1863			308		606	20	92	161	15	1	4	<2	0.4	211	40	251	30.30	0.07	21	89
MB14-15D	29-Nov-16	7.1	1677						10														
MB14-15D	17-Oct-17	7.0	1633	7.4		196		530	7	86	141	11	0	21	<2	0.1	4	1	85	3.92	0.03	6	7
MB14-15D	29-Nov-18	6.8	1362	7.7				509	4	49	142	12	0	9	4.0	0.1	40	1	24	3.49	0.64	1	16
No. of samples		5.0	5.0	2.0	0.0	3.0	1.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.8	1362.1	7.4	0.0	196.0	273.3	509.0	4.0	49.0	141.0	11.2	0.2	3.9	4.0	0.1	3.9	0.8	24.0	3.5	0.0	0.8	7.3
Maximum		7.1	1863.0	7.7	0.0	308.0	273.3	606.0	20.0	92.4	165.0	37.7	1.5	21.0	4.0	0.4	211.0	40.3	251.0	30.3	0.6	21.1	89.1
Mean		7.0	1661.6	7.6		242.7	273.3	562.3	12.1	75.9	152.3	19.1	0.7	12.1	4.0	0.2	67.9	15.5	122.3	12.3	0.2	8.7	33.5
Standard Deviation		0.1	189.5	0.2		58.3		50.1	7.5	19.2	12.5	12.5	0.6	7.3		0.2	96.6	18.8	96.0	12.5	0.3	8.7	37.5
80th Percentile		7.0	1790.8	7.6		274.4	273.3	604.8	20.0	88.8	162.6	24.3	0.9	16.8	4.0	0.3	108.5	27.9	177.8	19.1	0.4	12.6	48.2
MB14-15D (Wet Season)																							
MB14-15D	1-Apr-15	7.1	1374			204	249	446	10	89	120	21	1	36	<2	0.1	138	5	181	6.79	0.21	1,300	7
MB14-15D	29-Mar-16	7.1	1607			252		556	10	101	154	14	0	11			56	5	92	10.10	0.04	41	16
MB14-15D	23-Mar-17	6.6	1207	7.2				422	10	45	117	20	0	81	10.0	0.2	29	5	114	9.93	0.18	32	28
MB14-15D	26-Mar-18	6.4	1179	7.1		112		408	10	40	117	13		27	14.0	0.0	9	9	39	8.17	0.05	49	19
No. of samples		4.0	4.0	2.0	0.0	3.0	1.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.4	1178.5	7.1	0.0	112.0	248.9	408.0	9.9	40.4	117.0	12.7	0.3	11.4	10.0	0.0	8.6	4.6	39.4	6.8	0.0	31.7	6.5
Maximum		7.1	1607.2	7.2	0.0	252.0	248.9	556.0	10.3	101.0	154.0	21.3	0.7	80.7	14.0	0.2	138.0	9.0	181.0	10.1	0.2	1300.0	28.3
Mean		6.8	1341.9	7.2		189.3	248.9	458.0	10.1	68.7	127.0	17.1	0.5	38.9	12.0	0.1	58.1	6.0	106.5	8.7	0.1	355.5	17.5
Standard Deviation		0.4	196.8	0.1		71.1		67.2	0.2	30.7	18.1	4.4	0.2	29.7	2.8	0.1	56.7	2.0	58.7	1.6	0.1	629.7	9.0
80th Percentile		7.1	1467.5	7.2		232.8	248.9	490.0	10.1	93.6	133.6	20.8	0.6	54.1	13.2	0.1	89.0	6.8	140.8	10.0	0.2	549.3	22.6
MB14-16 (Wet Season)																							
MB14-16	23-Apr-15	5.3	94			10	12	17	<5	3	5	2	0.1	20	12.0	1.0	827	171	48	120.00	0.54	5	340
MB14-16	30-Mar-16	5.3	77			12		12		3	4	2	<0.1	14	8.0	0.7	326	187	63	117.00		1	368
MB14-16	22-Mar-17	5.1	67	5.7				12	2	1	4	2	<0.1	173	28.0	1.2	755	181	23	127.00	0.08	16	406
No. of samples		3.0	3.0	1.0	0.0	2.0	1.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
Minimum		5.1	67.1	5.7	0.0	10.0	12.2	11.9	2.2	1.3	3.7	1.5	0.1	14.3	8.0	0.7	326.0	171.0	23.4	117.0	0.1	0.7	340.0
Maximum		5.3	93.5	5.7	0.0	12.0	12.2	17.1	2.2	2.9	5.0	1.8	0.1	173.0	28.0	1.2	827.0	187.0	62.6	127.0	0.5	15.9	406.0
Mean		5.2	79.0	5.7		11.0	12.2	13.8	2.2	2.3	4.2	1.6	0.1	68.9	16.0	1.0	636.0	179.7	44.8	121.3	0.3	7.2	371.3
Standard Deviation		0.1	13.4			1.4		2.9		0.9	0.7	0.2		90.2	10.6	0.3	270.9	8.1	19.8	5.1	0.3	7.8	33.1
80th Percentile		5.3	86.7	5.7		11.6	12.2	15.2	2.2	2.8	4.6	1.7	0.1	111.6	21.6	1.1	798.2	184.6	56.9	124.2	0.4	11.6	390.8
MB14-17S (Wet Season)																							
MB14-17S	1-Apr-15	5.1	1949			5	6	1,080	<5	127	154	16	1	501	50.0	28.0	62,600	15,800	6,510	11000.00	85.20	10,900	8,310
MB14-17S	31-Mar-16	4.8	1984			5		1,030		119	157	4	2	670	54.0	23.8	59,200	16,600	6,270	9860.00	7.63	8,850	7,000
MB14-17S	12-Apr-17	4.6	2423	5.2				1,370	4	183	182	5	2	2,110	90.0	44.4	72,500	21,600	6,470	15100.00	4.46	12,100	12,500
MB14-17S	23-Mar-18	4.7	1970	5.1		4		1,130	3	145	160	4		1,500	52.0	32.4	61,800	17,700	6,210	11900.00	17.40	13,400	9,350
No. of samples		4.0	4.0	2.0	0.0	3.0	1.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		4.6	1948.6	5.1	0.0	3.7	5.6	1030.0	3.4	119.0	154.0	4.3	1.2	501.0	50.0	23.8	59200.0	15800.0	6210.0	9860.0	4.5	8850.0	7000.0
Maximum		5.1	2422.8	5.2	0.0	4.6	5.6	1370.0	3.6	183.0	182.0	15.7	1.7	2110.0	90.0	44.4	72500.0	21600.0	6510.0	15100.0	85.2	13400.0	12500.0
Mean		4.8	2081.2	5.2		4.3	5.6	1152.5	3.5	143.5	163.3	7.4	1.5	1195.3	61.5	32.2	64025.0	17925.0	6365.0	11965.0	28.7	11312.5	9290.0
Standard Deviation		0.2	228.2	0.1		0.5		150.6	0.1	28.5	12.7	5.6	0.3	750.0	19.1	8.9	5833.5	2570.8	147.3	2250.5	38.1	1933.2	2346.1

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
80th Percentile		4.9	2159.3	5.2		4.6	5.6	1226.0	3.6	160.2	168.8	9.4	1.7	1744.0	68.4	37.2	66560.0	19260.0	6486.0	13180.0	44.5	12620.0	10610.0
MB14-17D (Wet Season)																							
MB14-17D	1-Apr-15	5.2	2178			9	11	1,300	<5	144	204	18	0.2	1,690	20.0	29.2	52,700	18,400	8,160	11700.00	31.60	12,100	8,450
MB14-17D	31-Mar-16	5.3	2289			15		1,260		139	199	18	2	1,370	34.0	28.6	50,200	19,800	7,990	11500.00	12.50	13,500	7,920
MB14-17D	12-Apr-17	4.7	2425	5.1				1,370	4	182	182	5	2	1,950	52.0	45.4	73,500	21,600	6,570	15500.00	27.30	18,100	12,400
MB14-17D	23-Mar-18	4.7	2235	5.0				1,340	4	147	203	17		4,840	684.0	36.8	48,700	20,600	8,030	12900.00	43.60	12,400	9,900
No. of samples		4.0	4.0	2.0	0.0	2.0	1.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		4.7	2177.8	5.0	0.0	9.0	11.0	1260.0	3.7	139.0	182.0	5.3	0.2	1370.0	20.0	28.6	48700.0	18400.0	6570.0	11500.0	12.5	12100.0	7920.0
Maximum		5.3	2425.0	5.1	0.0	15.0	11.0	1370.0	4.0	182.0	204.0	18.2	1.6	4840.0	684.0	45.4	73500.0	21600.0	8160.0	15500.0	43.6	18100.0	12400.0
Mean		5.0	2281.5	5.1		12.0	11.0	1317.5	3.9	153.0	197.0	14.5	1.1	2462.5	197.5	35.0	56275.0	20100.0	7687.5	12900.0	28.8	14025.0	9667.5
Standard Deviation		0.3	105.8	0.1		4.2		47.9	0.2	19.6	10.2	6.2	0.8	1602.7	324.6	7.9	11601.3	1351.5	748.5	1840.3	12.8	2782.5	2004.7
80th Percentile		5.3	2343.2	5.1		13.8	11.0	1352.0	3.9	161.0	203.4	17.8	1.6	3106.0	304.8	40.2	61020.0	21000.0	8082.0	13940.0	36.4	15340.0	10900.0
MB14-17D (Dry Season)																							
MB14-17D	24-Nov-15	5.9	3987			112		2,310	10	228	415	49	2	2,170	20.0	44.0	12,000	31,500	16,200	14800.00	14.10	4,580	9,710
MB14-17D	29-Nov-16	5.9	3155																				
MB14-17D	18-Oct-17	4.8	2626	5.2				1,530	5	144	248	33	2	5,450	2560.0	39.6	31,000	23,600	10,500	13800.00	29.20	8,750	9,700
MB14-17D	29-Nov-18	5.7	2729	5.0				1,570	6	149	266	31	3	5,930	162.0	38.4	30,700	25,300	11,100	14200.00	114.00	5,950	10,700
No. of samples		4.0	4.0	2.0	0.0	1.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		4.8	2626.1	5.0	0.0	112.0	0.0	1530.0	5.1	144.0	248.0	31.0	1.7	2170.0	20.0	38.4	12000.0	23600.0	10500.0	13800.0	14.1	4580.0	9700.0
Maximum		5.9	3987.0	5.2	0.0	112.0	0.0	2310.0	10.0	228.0	415.0	48.7	2.5	5930.0	2560.0	44.0	31000.0	31500.0	16200.0	14800.0	114.0	8750.0	10700.0
Mean		5.6	3124.4	5.1		112.0		1803.3	7.0	173.7	309.7	37.6	2.2	4516.7	914.0	40.7	24566.7	26800.0	12600.0	14266.7	52.4	6426.7	10036.7
Standard Deviation		0.5	619.0	0.1				439.2	2.6	47.1	91.7	9.7	0.4	2046.4	1427.2	2.9	10884.1	4158.1	3132.1	503.3	53.9	2125.5	574.5
80th Percentile		5.9	3487.7	5.2		112.0		2014.0	8.4	196.4	355.4	42.5	2.5	5738.0	1600.8	42.2	30880.0	29020.0	14160.0	14560.0	80.1	7630.0	10304.0
MB14-20S (Wet Season)																							
MB14-20S	31-Mar-15	4.8	2106		82			1,120	<5	141	172	8	1	2,160	60.0	21.2	33,600	10,500	7,720	6660.00	4.13	2,990	6,290
MB14-20S	5-Apr-16	4.9	2101					1,140	<5	143	178	7	2	946	100.0	20.0	29,700	9,210	7,000	6460.00	6.35	1,950	5,670
MB14-20S	12-Apr-17	4.7	2032	5.3		5		1,090	4	143	164	6	2	1,930	36.0	20.0	31,400	9,200	6,810	6000.00	2.59	4,490	5,710
MB14-20S	27-Mar-18	4.4	1968	4.7		5		1,050	3	135	159	5		3,570	90.0	21.0	32,800	9,760	7,510	6240.00	6.26	3,160	5,740
No. of samples		4.0	4.0	2.0	1.0	2.0	0.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		4.4	1967.7	4.7	82.0	4.7	0.0	1050.0	3.4	135.0	159.0	4.8	1.2	946.0	36.0	20.0	29700.0	9200.0	6810.0	6000.0	2.6	1950.0	5670.0
Maximum		4.9	2106.0	5.3	82.0	5.3	0.0	1140.0	4.2	143.0	178.0	7.5	2.1	3570.0	100.0	21.2	33600.0	10500.0	7720.0	6660.0	6.4	4490.0	6290.0
Mean		4.7	2051.7	5.0	82.0	5.0		1100.0	3.8	140.5	168.3	6.4	1.7	2151.5	71.5	20.6	31875.0	9667.5	7260.0	6340.0	4.8	3147.5	5852.5
Standard Deviation		0.2	65.4	0.4		0.4		39.2	0.6	3.8	8.4	1.3	0.5	1082.4	29.1	0.6	1711.5	613.6	425.9	284.3	1.8	1042.6	293.1
80th Percentile		4.9	2103.0	5.2	82.0	5.2		1128.0	4.0	143.0	174.4	7.4	2.0	2724.0	94.0	21.1	33120.0	10056.0	7594.0	6540.0	6.3	3692.0	5960.0
MB14-20S (Dry Season)																							
MB14-20S	19-Oct-17	7.0	2200	7.6		8		988	16	170	182	21	1	31	<10	0.8	380	603	1,230	406.00	0.06	942	248
MB14-20D (Dry Season)																							
MB14-20D	3-Dec-14	6.2	2937			86	105	1,360	25	177	199	118	3	76	40.0	12.2	3,670	7,930	6,650	4770.00	0.20	201	4,170
MB14-20D	23-Nov-15	6.6	2797			126		1,300	15	190	201	60	4	3	<2	16.8	2,930	8,760	7,710	5440.00	0.06	173	5,550
MB14-20D	2-Dec-16	6.0	2412																				
MB14-20D	19-Oct-17	5.9	2308	6.8		68		1,120	8	154	180	28	2	18	36.0	19.6	8,390	9,980	8,180	5960.00	0.17	191	6,130
MB14-20D	4-Dec-18	6.1	2242	7.5				1,180	12	166	204	21	4	12	<10	18.0	9,000	10,700	8,740	6220.00	5.14	179	6,210
No. of samples		5.0	5.0	3.0	0.0	4.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.9	2241.9	6.8	0.0	67.5	104.9	1120.0	7.6	154.0	180.0	21.2	2.3	2.5	36.0	12.2	2930.0	7930.0	6650.0	4770.0	0.1	173.0	4170.0
Maximum		6.6	2937.3	7.5	0.0	126.0	104.9	1360.0	25.0	190.0	204.0	118.0	3.5	76.0	40.0	19.6	9000.0	10700.0	8740.0	6220.0	5.1	201.0	6210.0
Mean		6.2	2539.2	7.2		93.2	104.9	1240.0	14.9	171.8	196.0	56.9	3.2	27.1	38.0	16.7	5997.5	9342.5	7820.0	5597.5	1.4	186.0	5515.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Standard Deviation		0.3	309.5	0.5		29.9		109.5	7.4	15.4	10.9	44.1	0.6	33.2	2.8	3.2	3139.3	1236.1	886.4	639.9	2.5	12.5	943.7
80th Percentile		6.3	2825.1	7.4		110.0	104.9	1324.0	19.0	182.2	202.2	83.2	3.5	41.0	39.2	18.6	8634.0	10268.0	8404.0	6064.0	2.2	195.0	6162.0
MB14-20D (Wet Season)																							
MB14-20D	31-Mar-15	6.1	2387			60	73	1,190	10	167	180	52	1	17	<10	18.2	8,300	9,550	7,180	5770.00	0.26	297	6,050
MB14-20D	5-Apr-16	6.1	2369			72		1,210	10	165	192	38	3	14	<20	20.0	9,840	10,700	8,500	6400.00	0.31	212	6,820
MB14-20D	12-Apr-17	5.9	2484	7.4				1,220	11	190	195	35	3	65	<10	13.8	2,240	7,310	6,450	4700.00	0.09	896	4,720
MB14-20D	27-Mar-18	6.0	2253	6.7		62		1,160	8	165	188	21		22	<10	20.2	10,500	10,700	8,200	6350.00	0.13	270	6,920
No. of samples		4.0	4.0	3.0	0.0	4.0	1.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		5.9	2253.0	6.7	0.0	60.0	73.2	1160.0	8.2	165.0	180.0	20.9	1.1	14.2	0.0	13.8	2240.0	7310.0	6450.0	4700.0	0.1	212.0	4720.0
Maximum		6.1	2483.7	7.4	0.0	72.0	73.2	1220.0	11.0	190.0	195.0	52.0	3.1	64.5	0.0	20.2	10500.0	10700.0	8500.0	6400.0	0.3	896.0	6920.0
Mean		6.0	2373.1	7.1		64.7	73.2	1195.0	9.8	171.8	188.8	36.5	2.4	29.5		18.1	7720.0	9565.0	7582.5	5805.0	0.2	418.8	6127.5
Standard Deviation		0.1	94.6	0.5		6.4		26.5	1.2	12.2	6.5	12.8	1.1	23.6		3.0	3767.8	1598.1	943.0	790.2	0.1	320.1	1015.7
80th Percentile		6.1	2425.4	7.3		68.0	73.2	1214.0	10.4	176.2	193.2	43.8	3.1	39.1		20.1	10104.0	10700.0	8320.0	6370.0	0.3	536.6	6860.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-53. Groundwater Quality Data for Bore RN022547, Towards Northern Site Boundary

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
RN022547 (Dry Season)																							
RN022547	28-Oct-08	7.3	395					1	<5	17	38	2	1	10	400.0	<0.2	0	1	265	2.30	<0.1	1	<5
RN022547	26-Sep-12	6.8	222			76	93	<0.1	<5	6	11	2	0	4	15100.0	<0.02	0	2	4,650	0.55	<0.01	0	7
RN022547	24-Aug-11	6.7	210			78	95	0	<5	6	11	2	0	5	11600.0	0.1	0	3	4,630	1.80	<0.01	1	6
RN022547	6-Aug-10	7.1	388	-		162	197	0	<5	17	35	2	1	2	400.0	<0.2	<0.1	0	446	0.40	<0.1	0	18
No. of samples		4.0	4.0	1.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.7	209.7	0.0	0.0	76.0	92.7	0.2	0.0	5.8	10.9	1.5	0.2	2.0	400.0	0.1	0.3	0.3	265.0	0.4	0.0	0.2	6.3
Maximum		7.3	394.7	0.0	0.0	161.7	196.9	1.3	0.0	17.2	38.0	1.9	0.8	10.0	15100.0	0.1	0.4	3.0	4650.0	2.3	0.0	1.3	18.0
Mean		7.0	303.6			105.2	128.3	0.6		11.5	23.8	1.7	0.5	5.2	6875.0	0.1	0.3	1.4	2497.8	1.3		0.7	10.5
Standard Deviation		0.3	101.4			48.9	59.5	0.6		6.2	14.8	0.2	0.3	3.4	7612.0		0.1	1.2	2474.8	0.9		0.5	6.5
80th Percentile		7.2	390.5			128.2	156.2	0.9		16.8	36.3	1.8	0.8	6.8	13000.0	0.1	0.4	2.2	4638.0	2.0		1.0	13.7
RN022547 (Wet Season)																							
RN022547	8-Apr-09	7.2	420				829	0		17	34			9	400.0	<0.2	0	1	371	1.10	<0.1	1	<5
RN022547	23-Feb-11	6.7	217					2	<5	7	12	2	0	7	12200.0	<0.2	1	2	4,570	1.20	<0.1	1	16
RN022547	15-Feb-12	6.8	210			12	15	1	<5	7	12	2	0	19	9900.0	0.1	1	3	4,740	2.15	0.03	6	9
No. of samples		3.0	3.0	0.0	0.0	1.0	2.0	3.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.7	209.8	0.0	0.0	12.0	14.6	0.4	0.0	6.5	11.9	1.6	0.1	7.0	400.0	0.1	0.2	0.7	371.0	1.1	0.0	0.6	9.2
Maximum		7.2	420.0	0.0	0.0	12.0	828.9	2.4	0.0	17.4	34.4	1.7	0.3	19.3	12200.0	0.1	1.4	2.8	4740.0	2.2	0.0	6.2	16.0
Mean		6.9	282.4			12.0	421.8	1.1		10.2	19.5	1.7	0.2	11.8	7500.0	0.1	0.8	1.9	3227.0	1.5	0.0	2.6	12.6
Standard Deviation		0.2	119.3				575.8	1.1		6.3	12.9	0.1	0.1	6.6	6255.4		0.6	1.0	2474.8	0.6		3.1	4.8
80th Percentile		7.0	338.9			12.0	666.1	1.6		13.1	25.6	1.7	0.3	15.2	11280.0	0.1	1.2	2.5	4672.0	1.8	0.0	4.1	14.6

Red numbers indicate that the concentration was below the indicated detection limit

Table B-54. Groundwater Quality Data for Bore RN022548, Towards Northern Site Boundary

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)									
Bore ID	**Sampling**	**pH**	**EC**	**pH**	**Acidity**	**HCO_3 Alkalinity**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
	Date		uS/cm			mg/L	mg/L as CaCO3																
RN022548 (Dry Season)																							
RN022548	6-Aug-10	7.4	520				224	273	1	<5	20	44	2	1	2	1800.0	<0.2	<0.1	1	21	0.50	<0.1	0	4
RN022548	6-Aug-10	7.4	520						1	<5	20	44	2	1	2	1800.0	<0.2	<0.1	1	21	0.50	<0.1	0	4
RN022548	6-Sep-11	7.4	826				294	359	6	<5	18	40	3	5	16	4850.0	<0.02	1	1	45	0.53	0.02	4	1
RN022548	26-Sep-12	7.4	780				410	500	1	<5	17	37	4	5	3	4800.0	<0.02	0	1	46	0.66	0.01	0	0
No. of samples		4.0	4.0	0.0	0.0		3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.4	520.0	0.0	0.0		224.4	272.8	1.1	0.0	17.1	36.7	2.3	1.1	2.0	1800.0	0.0	0.1	0.5	21.4	0.5	0.0	0.2	0.4
Maximum		7.4	826.0	0.0	0.0		410.0	500.2	5.6	0.0	19.8	43.7	3.5	5.1	15.5	4850.0	0.0	0.5	0.9	46.4	0.7	0.0	4.5	4.0
Mean		7.4	661.5				309.5	377.2	2.4		18.7	41.0	2.9	3.0	5.7	3312.5		0.3	0.7	33.5	0.5	0.0	1.3	2.4
Standard Deviation		0.0	164.5				93.8	114.8	2.2		1.4	3.4	0.7	2.2	6.6	1746.6		0.3	0.2	14.0	0.1	0.0	2.1	1.9
80th Percentile		7.4	798.4				363.6	443.6	3.1		19.8	43.7	3.4	4.7	8.1	4820.0		0.5	0.7	45.4	0.6	0.0	2.0	4.0
RN022548 (Wet Season)																							
RN022548	16-Feb-12	7.4	840				326	398	2	<5	18	39	4	6	27	2580.0	<0.2	1	1	86	1.07	<0.1	5	1
RN022548	24-Feb-11	7.2	629						2	<5	19	39	3	3	10	3800.0	<0.2	0	0	44	0.60	<0.1	1	
RN022548	16-Feb-12	7.4	840				326	398	3	<5	17	38	4	7	24	2140.0	<0.2	0	1	96	0.94	<0.1	8	<1
No. of samples		3.0	3.0	0.0	0.0		2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Minimum		7.2	629.0	0.0	0.0		326.0	397.7	1.5	0.0	17.1	38.0	2.9	2.9	10.0	2140.0	0.0	0.1	0.3	43.8	0.6	0.0	0.9	1.1
Maximum		7.4	840.0	0.0	0.0		326.0	397.7	3.2	0.0	18.5	39.2	4.1	6.5	27.1	3800.0	0.0	0.5	0.6	95.5	1.1	0.0	7.9	1.1
Mean		7.4	769.7				326.0	397.7	2.1		17.8	38.6	3.6	5.0	20.3	2840.0		0.3	0.5	75.1	0.9		4.5	1.1
Standard Deviation		0.1	121.8				0.0	0.0	1.0		0.7	0.6	0.6	1.9	9.1	860.0		0.2	0.2	27.5	0.2		3.5	
80th Percentile		7.4	840.0				326.0	397.7	2.5		18.3	39.0	4.0	6.2	25.8	3312.0		0.4	0.6	91.7	1.0		6.6	1.1
RN023304 (Dry Season)																							
RN023304	30-Oct-08	7.4	1453					85	587	5	135	114	4	2	21	<200	<0.2	0	0	12	0.50	<0.1	2	<5
RN023304	19-Oct-12	7.0	1504				228	278	529	5	137	105	4	2	15	18.0	<0.02	1	0	4	0.41	0.02	5	1
RN023304	7-Sep-11	7.1	1520				192	234	586	5	149	115	4	2	7	122.0	<0.2	<0.1	1	63	<0.1	<0.1	6	<1
RN023304	6-Aug-10	7.1	1612	-			202	246	667	5	165	124	4	2	6	<200	<0.2	0	<0.1	7	0.50	<0.1	1	14
No. of samples		4.0	4.0	1.0	0.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		7.0	1453.0	0.0	0.0		192.0	85.3	529.0	5.0	135.0	105.0	3.9	1.9	6.0	18.0	0.0	0.1	0.2	4.1	0.4	0.0	0.7	0.6
Maximum		7.4	1612.0	0.0	0.0		228.0	278.2	667.0	5.0	165.0	124.0	4.2	2.1	21.0	122.0	0.0	0.7	0.6	62.6	0.5	0.0	6.4	14.0
Mean		7.2	1522.3				207.4	210.9	592.3	5.0	146.5	114.5	4.1	2.0	12.3	70.0		0.3	0.4	21.4	0.5	0.0	3.4	7.3
Standard Deviation		0.1	66.3				18.6	85.8	56.7	0.0	13.8	7.8	0.1	0.1	7.1	73.5		0.3	0.2	27.7	0.1		2.7	9.5
80th Percentile		7.2	1556.8				217.7	258.9	619.0	5.0	155.4	118.6	4.1	2.0	17.4	101.2		0.5	0.5	32.5	0.5	0.0	5.5	11.3
RN023304 (Wet Season)																							
RN023304	8-Apr-09	7.3	1627	7.3				2048	644	5	150	114			3	<200	<0.2	0	1	26	0.40	<0.1	1	<5
RN023304	12-Apr-11	7.1	1612	7.8			170	207	649	5	155	120	4	2	22	<200	<0.2	1	<0.1	3	<0.1	0.30	1	2
RN023304	1-Mar-12	7.1	1538				218	266	579	5	146	112	4	2	29	44.0	<0.2	1	<0.1	5	<0.1	<0.1	1	1
No. of samples		3.0	3.0	2.0	0.0		2.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.1	1538.0	7.3	0.0		170.0	207.4	579.0	5.0	146.0	112.0	4.0	1.7	3.0	44.0	0.0	0.4	1.0	3.4	0.4	0.3	0.9	1.1
Maximum		7.3	1627.0	7.8	0.0		218.0	2047.9	649.0	5.0	155.0	120.0	4.1	1.9	28.5	44.0	0.0	0.9	1.0	26.0	0.4	0.3	1.4	2.0
Mean		7.2	1592.3	7.6			194.0	840.4	624.0	5.0	150.3	115.3	4.1	1.8	17.8	44.0		0.6	1.0	11.4	0.4	0.3	1.2	1.6
Standard Deviation		0.1	47.6	0.4			33.9	1046.1	39.1	0.0	4.5	4.2	0.1	0.1	13.3			0.3		12.7			0.3	0.6
80th Percentile		7.2	1621.0	7.7			208.4	1335.1	647.0	5.0	153.0	117.6	4.1	1.9	25.9	44.0		0.7	1.0	17.5	0.4	0.3	1.3	1.8

Red numbers indicate that the concentration was below the indicated detection limit

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)		Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic				300.0		1000		100				3000
ADWG 2015 Health					2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%			150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%			80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%			55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation			5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500		5000		10.0	400	1000		1000.00	100.00	200	20000

Table B-55. Groundwater Quality Data for Bores MB10-18 and MB10-19, Near Old Tailings Creek

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	**Sampling Date**	**pH**	**EC uS/cm**	**pH**	**Acidity mg/L**	**HCO_3 Alkalinity mg/L as CaCO3**	**HCO_3**	**SO_4**	**Cl**	**Ca**	**Mg**	**Na**	**K**	**Al**	**Fe**	**Cd**	**Cu**	**Co**	**Mn**	**Ni**	**Pb**	**U**	**Zn**
MB10-18 (Dry Season)																							
MB10-18	2-Dec-10	7.3	600				0	109	<5	48	37	8	1	20	<200	<0.2	1	0	23	0.40	0.30	2	
MB10-18	11-Oct-12	7.2	689			202	246	106	<5	52	41	8	1	7	2.0	<0.02	2	0	19	0.71	0.04	1	9
MB10-18	24-Aug-11	7.6	611			164	200	103	<5	49	38	7	1	19	<2	0.1	3	1	8	1.26	0.15	7	1
No. of samples		3.0	3.0	0.0	0.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Minimum		7.2	600.0	0.0	0.0	164.0	0.0	103.0	0.0	47.9	37.4	6.9	0.5	6.9	2.0	0.1	1.3	0.2	8.2	0.4	0.0	1.2	1.1
Maximum		7.6	689.0	0.0	0.0	202.0	246.4	109.0	0.0	52.1	41.2	8.1	0.6	20.0	2.0	0.1	2.6	0.9	23.4	1.3	0.3	6.7	8.5
Mean		7.3	633.3			183.0	148.8	106.0		49.5	38.8	7.5	0.6	15.4	2.0	0.1	2.0	0.4	16.9	0.8	0.2	3.2	4.8
Standard Deviation		0.2	48.5			26.9	131.0	3.0		2.3	2.1	0.6	0.1	7.4			0.7	0.4	7.8	0.4	0.1	3.1	5.2
80th Percentile		7.4	657.8			194.4	227.9	107.8		50.7	39.8	7.9	0.6	19.7	2.0	0.1	2.4	0.6	21.7	1.0	0.2	4.7	7.0
MB10-18 (Wet Season)																							
MB10-18	31-Mar-11	7.4	593	8.1			0	107	<5	47	38	8	0	27	<200	<0.2	2	0	16	1.50	0.70	1	11
MB10-18	15-Feb-12	7.3	714			188	229	104	<5	50	38	7	1	14	<2	0.0	3	0	21	0.20	1.25	1	17
No. of samples		2.0	2.0	1.0	0.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.3	593.0	8.1	0.0	188.0	0.0	104.0	0.0	47.2	37.9	7.4	0.3	14.4	0.0	0.0	2.2	0.1	16.2	0.2	0.7	1.0	11.0
Maximum		7.4	714.0	8.1	0.0	188.0	229.4	107.0	0.0	50.2	38.2	7.9	0.6	27.0	0.0	0.0	2.9	0.2	20.6	1.5	1.3	1.4	16.5
Mean		7.4	653.5	8.1		188.0	114.7	105.5		48.7	38.1	7.7	0.5	20.7		0.0	2.6	0.1	18.4	0.9	1.0	1.2	13.8
Standard Deviation		0.0	85.6				162.2	2.1		2.1	0.2	0.4	0.2	8.9			0.5	0.1	3.1	0.9	0.4	0.3	3.9
80th Percentile		7.4	689.8	8.1		188.0	183.5	106.4		49.6	38.1	7.8	0.5	24.5		0.0	2.8	0.2	19.7	1.2	1.1	1.3	15.4
MB10-19 (Dry Season)																							
MB10-19	2-Dec-10	7.4	517				0	80	<5	43	35	4	1	15	<200	<0.2	0		9	0.30	0.30	1	
MB10-19	11-Oct-12	7.5	542			177	215	78	<5	43	35	4	1	11	2.0	<0.02	2	0	8	0.43	0.02	1	2
MB10-19	24-Aug-11	7.8	543			136	166	78	<5	43	35	4	1	20	<2	0.1	2	1	7	0.61	0.09	4	1
No. of samples		3.0	3.0	0.0	0.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	2.0
Minimum		7.4	517.0	0.0	0.0	136.0	0.0	77.8	0.0	42.8	34.5	3.6	0.7	10.9	2.0	0.1	0.3	0.1	6.7	0.3	0.0	0.5	0.5
Maximum		7.8	543.0	0.0	0.0	176.5	215.3	79.7	0.0	43.3	34.7	4.4	0.8	20.3	2.0	0.1	2.1	0.6	9.0	0.6	0.3	4.4	2.0
Mean		7.5	534.0			156.3	127.1	78.4		43.0	34.6	3.9	0.7	15.4	2.0	0.1	1.4	0.3	7.7	0.4	0.1	1.8	1.3
Standard Deviation		0.2	14.7			28.6	112.8	1.1		0.3	0.1	0.4	0.1	4.7			1.0	0.3	1.2	0.2	0.1	2.2	1.1
80th Percentile		7.7	542.6			168.4	195.6	78.9		43.1	34.6	4.2	0.8	18.2	2.0	0.1	2.0	0.5	8.4	0.5	0.2	2.9	1.7
MB10-19 (Wet Season)																							
MB10-19	15-Apr-11	7.5	551	8.1			0	79	<5	43	36	4	1	7	<200	<0.2	0	<0.1	2	0.40	<0.1	0	<1
MB10-19	15-Feb-12	7.5	618			174	212	81	<5	46	37	4	1	17	<2	0.0	1	0	14	0.06	0.38	1	6
No. of samples		2.0	2.0	1.0	0.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.5	551.0	8.1	0.0	174.0	0.0	78.7	0.0	42.7	35.6	3.8	0.6	7.0	0.0	0.0	0.2	0.0	2.3	0.1	0.4	0.3	6.3
Maximum		7.5	618.0	8.1	0.0	174.0	212.3	81.3	0.0	46.1	36.5	3.9	0.7	17.3	0.0	0.0	0.7	0.0	14.4	0.4	0.4	0.5	6.3
Mean		7.5	584.5	8.1		174.0	106.1	80.0		44.4	36.1	3.9	0.7	12.2		0.0	0.4	0.0	8.4	0.2	0.4	0.4	6.3
Standard Deviation		0.0	47.4				150.1	1.8		2.4	0.6	0.1	0.1	7.3			0.3		8.6	0.2		0.2	
80th Percentile		7.5	604.6	8.1		174.0	169.8	80.8		45.4	36.3	3.9	0.7	15.2		0.0	0.6	0.0	12.0	0.3	0.4	0.5	6.3

Red numbers indicate that the concentration was below the indicated detection limit

Table B-56. Groundwater Quality Data for Bores MB10-18 and MB10-19, Near Old Tailings Creek

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

	EC (field)																			
												Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic													300.0		1000		100				3000
ADWG 2015 Health														2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%												150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%												80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%												55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation												5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water	4500											5000		10.0	400	1000		1000.00	100.00	200	20000
		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
RN023302 (Dry Season)																						
RN023302	5-Aug-10	7.1	472	-		229	278.1	1	<5	31	41	3	1	16	<200	<0.2	0	<0.1	1	<0.1	<0.1	0	14
RN023302	26-Sep-12	7.3	532			247	301	1	<5	30	39	2	1	5	4.0	<0.02	2	0	0	0.32	0.03	1	0
RN023302	24-Aug-11	7.3	497			215	262	2	<5	31	39	2	1	21	<2	0.1	5	3	5	3.31	0.09	15	1
No. of samples		3.0	3.0	1.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		7.1	472.0	0.0	0.0	215.0	262.3	1.1	0.0	30.2	39.2	2.3	0.8	5.3	4.0	0.1	0.3	0.1	0.4	0.3	0.0	0.5	0.4
Maximum		7.3	532.0	0.0	0.0	247.0	301.3	1.6	0.0	30.8	41.4	2.6	1.0	21.1	4.0	0.1	5.0	2.7	5.0	3.3	0.1	15.3	14.0
Mean		7.2	500.4			230.2	280.6	1.3		30.6	40.0	2.4	0.9	14.1	4.0	0.1	2.5	1.4	2.0	1.8	0.1	5.6	5.0
Standard Deviation		0.1	30.1			16.1	19.6	0.3		0.3	1.2	0.2	0.1	8.1			2.3	1.8	2.6	2.1	0.0	8.4	7.8
80th Percentile		7.3	518.1			239.6	292.0	1.4		30.8	40.6	2.5	1.0	19.1	4.0	0.1	3.9	2.2	3.2	2.7	0.1	9.5	8.6
RN023302 (Wet Season)																						
RN023302	15-Feb-12	7.2	543			222	271	1	<5	33	42	2	1	12	<2	0.0	6	0	4	0.40	1.56	1	2
RN023302	15-Apr-11	7.2	492	8.0		201	245	1	<5	30	40	2	1	6	<200	<0.2	0	<0.1	0	0.30	0.10	1	<1
No. of samples		2.0	2.0	1.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum		7.2	492.0	8.0	0.0	201.0	245.2	1.1	0.0	30.0	39.7	2.4	0.8	6.0	0.0	0.0	0.2	0.1	0.4	0.3	0.1	0.5	2.0
Maximum		7.2	543.0	8.0	0.0	222.0	270.8	1.4	0.0	32.6	41.9	2.4	0.8	12.3	0.0	0.0	6.5	0.1	4.3	0.4	1.6	0.5	2.0
Mean		7.2	517.5	8.0		211.5	258.0	1.3		31.3	40.8	2.4	0.8	9.2		0.0	3.3	0.1	2.3	0.4	0.8	0.5	2.0
Standard Deviation		0.0	36.1			14.8	18.1	0.2		1.8	1.6	0.0	0.0	4.5			4.4		2.7	0.1	1.0	0.0	
80th Percentile		7.2	532.8	8.0		217.8	265.7	1.3		32.1	41.5	2.4	0.8	11.0		0.0	5.2	0.1	3.5	0.4	1.3	0.5	2.0

Red numbers indicate that the concentration was below the indicated detection limit

Table B-57. Groundwater Quality Data for Bore MB10-20 and MB10-21, Downstream of the Mine Site

		FIELD DATA		LAB DATA			MAJOR IONS (in mg/L)							DISSOLVED METALS (in ug/L)								
Bore ID	Sampling Date	pH	EC uS/cm	pH	Acidity mg/L	HCO_3 Alkalinity mg/L as CaCO3	HCO_3	SO_4	Cl	Ca	Mg	Na	K	Al	Fe	Cd	Cu	Co	Mn	Ni	Pb	U	Zn
MB10-20 (Dry Season)																						
MB10-20	2-Dec-10	5.7	1118					529	10	32	115	44	2	18	400.0	<0.2	1	11	871	7.90	0.40	3	15
MB10-20	19-Oct-12	6.1	559			98	120	140	<5	9	43	17	1	10	446.0	0.1	1	6	837	10.60	0.34	2	19
MB10-20	31-Aug-11	5.6	677			228	278	299	5	22	63	12	2	6	46.0	0.1	19	56	902	42.30	0.96	0	25
No. of samples		3.0	3.0	0.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		5.6	559.0	0.0	0.0	98.4	120.0	140.0	5.0	9.2	43.2	11.7	0.7	5.8	46.0	0.1	0.9	6.3	837.0	7.9	0.3	0.4	15.0
Maximum		6.1	1118.0	0.0	0.0	228.0	278.2	529.0	10.0	32.4	115.0	43.9	2.2	18.0	446.0	0.1	18.9	56.3	902.0	42.3	1.0	3.3	24.8
Mean		5.8	784.7			163.2	199.1	322.7	7.5	21.1	73.7	24.1	1.5	11.2	297.3	0.1	7.0	24.5	870.0	20.3	0.6	1.7	19.5
Standard Deviation		0.3	294.6			91.7	111.8	195.6	3.5	11.6	37.1	17.3	0.8	6.2	218.9	0.0	10.3	27.7	32.5	19.1	0.3	1.5	5.0
80th Percentile		5.9	941.6			202.1	246.5	437.0	9.0	28.2	94.2	33.1	1.9	14.8	427.6	0.1	11.8	38.1	889.6	29.6	0.7	2.6	22.3
MB10-20 (Wet Season)																						
MB10-20	14-Apr-11	5.4	41	6.2		10	13	5	<5	1	2	3	1	46	<200	<0.2	484	9	38	11.10	0.40	1	32
MB10-20	20-Feb-13	6.1	634			104	127	162	10	14	51	16	1	29	8700.0	0.1	1	15	426	20.70	0.04	1	5
MB10-20	27-Feb-14	5.4	59			14	16	3	<5	1	2	3	1	35	1150.0	<0.02	6	2	33	3.94	0.20	0	8
No. of samples		3.0	3.0	1.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		5.4	40.9	6.2	0.0	10.4	12.7	3.0	10.0	0.5	1.8	2.9	0.5	28.9	1150.0	0.1	0.5	2.2	33.2	3.9	0.0	0.2	4.9
Maximum		6.1	634.0	6.2	0.0	104.0	126.9	162.0	10.0	14.0	50.5	16.0	1.4	46.0	8700.0	0.1	484.0	14.7	426.0	20.7	0.4	0.9	32.0

RUM JUNGLE REHABILITATION PROJECT - ENVIRONMENTAL IMPACT STATEMENT

Groundwater Quality Data

15/6/20

			EC (field)											Aluminium (Filtered)	Iron (Filtered)	Cadmium (Filtered)	Copper (Filtered)	Cobalt (Filtered)	Manganese (Filtered)	Nickel (Filtered)	Lead (Filtered)	Uranium (Filtered)	Zinc (Filtered)
ADWG 2015 Aesthetic															300.0		1000		100				3000
ADWG 2015 Health																2.0	2000		500	20.00	10.00	17	
ANZECC 2000 (FW) 80%														150		0.8	2.5	13	3600	17.00	9.40		31
ANZECC 2000 FW 90%														80		0.4	1.8		2500	13.00	5.60		15
ANZECC 2000 FW 95%														55		0.2	1.4		1900	11.00	3.40		8
ANZECC 2000 Long-term Irrigation														5000	200.0	10	200	50	200	200.00	2000.00	10	2000
ANZECC 2000 Stock Water			4500											5000		10.0	400	1000		1000.00	100.00	200	20000
Mean		5.6	244.5	6.2		42.6	52.0	56.7	10.0	5.2	18.0	7.3	0.8	36.6	4925.0	0.1	163.4	8.5	165.7	11.9	0.2	0.6	15.1
Standard Deviation		0.4	337.5			53.2	64.9	91.2		7.7	28.1	7.5	0.5	8.7	5338.7		277.6	6.3	225.4	8.4	0.2	0.4	14.8
80th Percentile		5.8	403.8	6.2		67.8	82.7	99.2	10.0	8.8	31.0	10.8	1.1	41.6	7190.0	0.1	292.7	12.3	270.8	16.9	0.3	0.8	22.5
MB10-21 (Dry Season)																							
MB10-21	1-Dec-10	6.9	319					3	<5	20	10	27	2	31	<200	<0.2		1	151	1.30	8.00	4	5
MB10-21	31-Aug-11	6.3	316			119	145	13	<5	21	12	25	2	12	6.0	<0.02	16	<0.01	55	0.31	0.17	2	60
MB10-21	9-Oct-13	6.9	399			137	168	32	<5	22	13	30	2	6	<2	<0.02	8	0	2	0.07	0.02	2	12
MB10-21	19-Oct-12	7.0	349			100	122	19	<5	21	12	27	2	10	<2	<0.02	12	0	1	0.22	0.10	2	9
No. of samples		4.0	4.0	0.0	0.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum		6.3	316.4	0.0	0.0	100.0	122.0	3.4	0.0	20.0	10.0	25.0	1.6	5.7	6.0	0.0	7.6	0.0	1.3	0.1	0.0	1.5	5.0
Maximum		7.0	399.3	0.0	0.0	137.4	167.6	31.5	0.0	22.4	13.1	29.6	1.9	31.0	6.0	0.0	16.3	0.8	151.0	1.3	8.0	4.3	59.6
Mean		6.8	345.9			118.8	144.9	16.7		20.9	11.7	27.2	1.7	14.7	6.0		11.9	0.3	52.3	0.5	2.1	2.5	21.4
Standard Deviation		0.3	38.6			18.7	22.8	11.8		1.1	1.3	1.9	0.2	11.2			4.4	0.4	70.4	0.6	4.0	1.2	25.6
80th Percentile		7.0	369.1			130.0	158.6	23.9		21.3	12.4	28.2	1.7	19.7	6.0		14.5	0.5	93.2	0.7	3.3	3.1	30.8
MB10-21 (Wet Season)																							
MB10-21	20-Feb-13	6.7	370			130	159	23	<5	22	13	28	2	21	4.0	0.0	7	0	15	0.33	0.07	2	15
MB10-21	27-Feb-14	6.9	387			264	322	24	<5	22	13	30	2	20	2.0	<0.02	7	0	1	0.09	0.05	2	12
MB10-21	14-Apr-11	7.4	379	8.0		144	176	2	<5	25	12	27	2	49	<200	<0.2	12	3	177	3.20	0.70	7	4
No. of samples		3.0	3.0	1.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum		6.7	370.0	8.0	0.0	130.0	158.6	2.4	0.0	21.8	11.8	26.6	1.6	19.8	2.0	0.0	6.8	0.0	1.4	0.1	0.1	1.5	4.0
Maximum		7.4	387.0	8.0	0.0	264.0	322.1	24.1	0.0	24.7	12.9	29.7	2.3	49.0	4.0	0.0	12.2	2.7	177.0	3.2	0.7	6.8	14.7
Mean		7.0	378.6	8.0		179.3	218.8	16.6		22.9	12.5	28.1	1.9	29.8	3.0	0.0	8.7	0.9	64.3	1.2	0.3	3.5	10.4
Standard Deviation		0.3	8.5			73.7	89.9	12.3		1.6	0.6	1.6	0.4	16.6	1.4		3.1	1.6	97.8	1.7	0.4	2.9	5.6
80th Percentile		7.2	383.7	8.0		216.0	263.5	23.8		23.7	12.9	29.1	2.1	37.7	3.6	0.0	10.1	1.6	112.0	2.1	0.4	5.0	13.8

Red numbers indicate that the concentration was below the indicated detection limit