

GROUNDWATER																												Mean	Lowest in Range	Highest in Range							
BOREHOLE	BH01	BH02	BH5	BH04	TMB04	BH05	BH06	BH07	BH5	TMB08	BH11	BH12	BH14	B99-62372	B99-62156	B99-62153	B99-62368	B99-62156	SVR - SIDEWALL 01	SVR01 (TMB10)	SL01 Floor of Slot	DCR-01 (TMB11)	DCR Chaigne 21394 Eastbound														
Chainage	645	644	856	657	TMB 4	638	656	643	858	TMB 8	647	655	649																								
Date Sampled	26/6/03	22/12/00	22/12/00	22/3/01	26/6/03	14/04/05	22/8/01	22/12/00	22/3/01	23/8/01	23/8/01	14/3/05	4/1/01	23/8/01	26/6/03	22/3/01	4/1/01	23/8/01	26/6/03	27/03/00	27/03/00	27/03/00	27/03/00	26/06/03	12/07/05	21/07/05	8/07/05	20/07/05	25/01/06								
Authority	ECOsci	VicRoads	VicRoads	VicRoads	ECOsci	TJH	VicRoads	VicRoads	VicRoads	VicRoads	URS	TJH	VicRoads	VicRoads	ECOsci	VicRoads	VicRoads	VicRoads	ECOsci																		
CONSTITUENTS	UNITS																																				
pH		6.5			6.0	7.1	6.4			7.0	6.5		12.1			7.1	7.5			6.6	6.7	6.4	6.0	6.4	6.6	7.7	6.9	7.2	8.1	7.3	7.1	6.0	12.1				
EC	µS/cm	3100			1607	2500	678			2060	1360		2029			450	1910			6800	8400	7700	1800	9700	6800	7000	7800	9300	8200	9100	4914.7	450	9700.0				
DO	mg/L				3.3	30.9			1.85	NR			30.9			2.04																	13.8	1.9	30.9		
Temperature	°C	13.0			13.6	12.5	16.1			16.0	15.8		15.9			13.0	16.1			13.0					12.5									14.3	12.5	16.1	
Salinity	by calc	1900														270				4100					4600									2717.5	270.0	4600.0	
TSS						7300							24																					3662.0	24.0	7300.0	
TDS		2000			1400	480						450			4800					4800				5100	4000	4000	4000	5500	4400	6400	3502.7	450.0	5100.0				
Total Alkalinity	as CaCO3	120			230	160						110			200	380	240	96	260	240				4000	4000	4000	4300	5500	4400	6400	267.9	96.0	510.0				
Langelier Index			<1.2	<0.3					-0.3			-0.7	-0.6	<0.8	-0.5				<0.5	-0.7																	
Bicarbonate	as HCO3	150			348	280	160						20			130				240				290													
Carbonate	as CO3	<1			<1	<1	<2						160			<1.000				<1				<1													
Sulphur	as SO4	50	42	88	23	650	110	120	88	36	130	107	120	130	182	166	640	124	211	226	170	200	100	50	140	120	110	150	180	270	170	163.4	23.0	650.0			
SWL	m	8.65				30.00	2.05						25.9			1.20				6.50				3.1													
Ca	Filtered	15	15	34	3	20	44	34	9	102	81	44	52	40	53		126	88	86	60	120	27	7.6	43	30	54	74	89	85	140	56.3	3.0	126.0				
Mg	Filtered	97	85	147	29	23	186	147	46	370	304	186	0.8	377	275		194	292	301	280	240	270	22	360	280	260	280	370	360	360	219.4	0.8	377.0				
Hardness	as CaCO3	440				140							130							1300				1200													
Na	Filtered	460	342	747	305	110	981	747	337	967	863	981	270	1200	1210		802	1030	1070	940				1200													
K	Filtered	15	17	24	17	4.5	17	24	16	19	10	17	25	37	21		35	29	26	19					28												
Carbonate	as CaCO3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	490	<1	<1		<1	<1	<1	<1				<2	<2	<2	<2	<2	<2								
Bicarbonate	as CaCO3	150	244	265	348	160	326	265	130	291	288	326	20	265	363		333	212	209	240						400	430	360	190								
Carbon Dioxide																																					
S	Filtered	50	42	88	23	650	110	120	88	36	130	107	120	130	182	166	640	124	211	226	170	200	100	50	140	120											
Cl		910	631	1450	299	91	2000	1450	552	2380	2250	2000	190	2780	2560		1670	2350	2550	2200	2600	2400	430	3100	2400	2200	2300	3000	2700	2900	1830.5	91.0	3100.0				
Fe	Filtered	28	-	-	<0.01	5.6	1.960	-	<0.01	0.22	4.00	1.960	<0.05	1.03	2.04		<0.01	4.89	5.02	11					22												
Al	Filtered	32	-	-	<0.01	6.1	0.29	<0.010	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	0.009	<0.01	22	<0.01	0.012	<0.01	13			48												
As	Filtered	0.004	-	-	<0.005	0.002	0.024	0.001	-	<0.005	<0.005	<0.001	0.001	<0.001	<0.005	0.002	0.002	<0.005	<0.005	0.002	0.003				0.002												
Mn	Filtered	3.1	-	-	0.304	0.59	0.485	-	0.187	0.574	0.731	0.485	<0.01	2.30	0.452		2.09	1.11	1.29	1.1					0.35												
Zn	Filtered	0.37	-	-	0.002	0.230	0.02	0.031	-	0.009	0.015	0.039	0.031	<0.01	0.4	0.023	0.240	0.009	0.044	0.012	0.39				0.37												
Ammonia	as NH4+	0.13	<0.01	0.05	0.08	0.01	0.8	0.07	0.05	0.11	0.22	0.17	0.07	1.0	<0.01	<0.01	0.66	0.26	<0.01	<0.01	0.94	0.031	0.015	0.34	0.02	0.018											
Nitrate (+Nitrite)	as N	0.085	1.22	<0.01	<0.01	1.70	0.09	0.07	<0.01	0.07	<0.01	<0.01	0.07	0.16	<0.01	<0.01	0.01	5.52	<0.01	<0.05	0.013				0.058												
Total Kjeldahl N	as N	4.5																							3.6												
Total Nitrogen	as N	4.6			<0.01	3				0.07	<0.01						8.80	5.52							3.6												
Chemical O2 demand	mg/L	170	63	46	11	92	78	70	46	32	98	99	70	8	85	137	92	53	256	87	<5				380												
Biochemical O2 demand	5day mg/L	6	8	18	7	3	5	5	18	16	4	5	5	3	16	9	6	3	12	3	11				4												
Total Cations	meq/L	29.00	23.07	46.91	16.18	23.40	8	60.61	46.91	19.30	78.09	66.83	60.61	15	86.16	78.32	4.70	57.99	73.96	76.27	67.1				77.1												
Total Anions	meq/L	29.10	23.64	48.05	15.88	23.90	8	65.52	48.05	18.94	75.63	71.34	65.52	18	86.95	82.97	4.30	56.76	74.93	80.74	69.6				75												
Actual (+/-) difference	meq/L	0.10	0.57		0.30	0.50		4.91	1.13	0.36	2.46	4.51	4.91		0.79	4.65	0.40	1.22	0.97	4.47	2.5				2.1												
Allowed (+/-) difference	meq/L	1.50	0.47		0.35	1.20		1.12	0.85	0.40	1.28	1.21	1.12		1.45	1.39	0.30	0.99	1.27	---	3.5				3.8												



ROCK																				
BH	855	645	644	856	657	638	857	656	643	858	646	859	647	860	655	648	861	649		
Chainage	19910	19945	20010	20097	20241	20370	20525	20558	20681	20731	20816	20919	21140	21215	21290	21410	21482	21500		
Depth (m)	17.2		15.0-15.1	31.0	39.9				22.0-22.1	24.1-24.2	10.5	20.8	23.6	27.0-27.1	43.9	37.0	18.0	24.0		
Date Sampled	27/9/01			12/9/01						12/9/01				12/9/01			27/9/01			
Authority	VicRoads		VicRoads	VicRoads					VicRoads	VicRoads			VicRoads	VicRoads			VicRoads			

CONSTITUENTS		UNITS	EPA																			
As	Total	mg/kg	30	2.8		5.0	4.4						4.2	6.1	3.3			4.0	3.9		8.2	6.5
Cd	Total	mg/kg	5	<0.5		<0.5	<0.5						<0.5	<0.5	<0.5			<0.5	<0.5		<0.5	<0.5
Cr	Total	mg/kg	250	45.0		29.0	30.2						27.0	28.9	30.3			47.2	57.4		54.2	52.8
Cu	Total	mg/kg	100	32.3		36.5	34.6						28.5	26.0	31.6			16.7	19.0		37.8	30.5
Co			50																			
Ni	Total	mg/kg	100	41.5		34.4	41.1						32.6	37.6	38.7			33.7	38.0		52.5	48.1
Pb	Total	mg/kg	300	14.9		13.2	17.7						18.5	26.2	18.7			16.0	12.9		23.1	22.9
Hg			2																			
Mo			40																			
Tin			50																			
Se			10																			
Zn	Total	mg/kg	500	94.9		79.4	108.0						78.8	78.8	87.2			29.2	46.4		90.0	91.2
pH after oxidation		kg/t		6.3		6.4	6.0						10.1	4.7	9.5			5.1	6.1		4.1	3.5
Acid Consumption		kg/t		5.1		3.5	3.5						20.3	3.0	9.6			0.8	3.5		4.1	2.5
Acid Production Potential		kg/t		<0.5		<0.5	1.5						2.8	2.8	2.4			1.2	0.9		4.0	6.1
Nett Acid Production Potential		kg/t		-4.8		-3.5	-2.0						-17.5	-0.2	-7.2			0.4	-2.6		-0.1	3.6
Net Acid Generation		kg/t		0.9		2.9	0.6						<0.1	<0.1	<0.1			1.4	1.9		2.1	4.1
NAG	pH		<4.5			7.300				7.700	5.400							6.900				
NAG	at pH 7.0	kg H2SO4/t	>5			<0.100				<0.100	0.500							0.100				
NAG	at pH 4.5	kg H2SO4/t	>5			<0.100				<0.100	<0.100							<0.100				
NAPP		kg H2SO4/t	positive			-10.500				-18.900	-15.200							-17.400				