



**CARBON BASED ENVIRONMENTAL
PTY LIMITED**
ACN 102 920 285

30 April 2010

Rocla Quarry Products
Rocla Calga Quarry
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**Six Monthly Calga Quarry Major Cations and Dissolved Metals
Environmental Monitoring Report – April 2010**

Please find enclosed the final laboratory analysis report of 25 groundwater samples comprising the six monthly detailed water analysis for major cations and dissolved metals that is required by the Site Water Management Plan.

Comparison of results between the 1 October 2009 and the 1 April 2010 shows little apparent change in water quality.

Please do not hesitate to contact me if further information is required.

Yours Faithfully

Colin Davies
Environmental Scientist
Company Director

Table 1: Comparison of analysis results between October 2009 and April 2010 sampling events.

Species	Units	CQ1	CQ3	CQ4	CQ5	CQ6	CQ7	CQ8	CQ9	CQ10	CQ11S	CQ11D	CQ12
pH Value	pH units	0.23	0.39	0.19	0.18	0.57	0.38	-0.66	0.25	0.51	0.40	-0.19	0.35
Electrical Conductivity @ 25°C	µS/cm	5	15	20	3	19	13	7	9	14	8	20	9
Hydroxide Alkalinity as CaCO ₃	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Carbonate Alkalinity as CaCO ₃	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Bicarbonate Alkalinity as CaCO ₃	ppm	3	3	5	0	0	0	0	0	0	0	-11	0
Total Alkalinity as CaCO ₃	ppm	3	3	5	0	0	0	0	0	0	0	-11	0
Sulphate as SO ₄ ²⁻	ppm	0.0	0.3	0.4	3.2	-1.8	1.9	2.1	1.1	4.1	-2.6	10.0	5.0
Chloride	ppm	0.3	1.3	2.0	-0.2	-4.3	1.4	-5.1	0.6	0.1	0.0	1.2	1.8
Calcium	ppm	0	0	0	0	-1	0	0	0	1	0	0	0
Magnesium	ppm	0	0	0	0	2	0	1	0	0	1	0	0
Sodium	ppm	-1	1	0	0	2	0	1	0	1	2	1	3
Potassium	ppm	0	0	0	0	1	0	0	0	0	0	0	0
Aluminium	ppm	-0.14	-0.17	0.00	-0.18	0.62	-0.02	-0.03	-0.03	0.03	-0.05	0.04	-0.05
Arsenic	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ppm	0	0	0	0	0.0002	0	0	0	0.0001	-0.0007	-0.0002	0
Chromium	ppm	0.002	0	0	0	0	0	0	0	0.004	0	0	0
Copper	ppm	-0.001	0.001	0.006	0	0.008	0	0	0.002	0	0	0	-0.002
Lead	ppm	-0.001	-0.003	0.004	0.001	0.003	0	-0.001	0.001	-0.001	-0.003	-0.026	-0.007
Manganese	ppm	-0.005	-0.459	0.001	0.001	0.017	0.001	-0.001	0	0.001	0.001	-0.005	-0.002
Nickel	ppm	0.001	-0.001	0	0	0.001	0	0	0	0.002	0.001	0.001	0
Selenium	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	ppm	-0.026	0.052	0.018	0.010	0.065	0.009	-0.007	0.009	-0.001	0.004	0.079	0.040
Boron	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Iron	ppm	-0.13	-4.21	0	0	0.29	0.00	-0.05	0.06	0.11	0.00	0.24	0
Mercury	ppm	0	0	0	0	0	0	0	0	0	0	0	0
Fluoride	ppm	0	0	0	0	0	0	0.03	0	0	0.01	0	0.03
Nitrite as N	ppm	0	0.002	0	0.02	0.07	0	0	0	0	0	0	0
Nitrate as N	ppm	-0.01	0.01	0.23	-0.56	0.60	-0.17	-0.34	0.36	-0.03	0.01	0	0.23
Nitrite + Nitrate as N	ppm	-0.01	0.03	0.23	-0.54	0.70	-0.17	-0.34	0.36	-0.03	0.01	0	0.23

Note: Results shown as below the limit of detection (<) have been taken as zero for the purposes of the comparison.

Table 1 continued.

Species	Units	CQ13	CP3	CP4*	CP5	CP6	CP7	CP8	MW7	MW8	MW9	MW10	MW13	MW16
pH Value	pH units	-0.02	0.38	-0.06	0.23	0.29	1.15	0.24	0.19	0.39	0.09	0.40	-0.76	0.26
Electrical Conductivity @ 25°C	µS/cm	15	2	19	-1	16	-99	-5	4	11	1	19	0	2
Hydroxide Alkalinity as CaCO ₃	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbonate Alkalinity as CaCO ₃	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicarbonate Alkalinity as CaCO ₃	ppm	-2	0	0	0	0	4	0	1	3	0	0	0	0
Total Alkalinity as CaCO ₃	ppm	-2	0	0	0	0	4	0	1	3	0	0	0	0
Sulphate as SO ₄ ²⁻	ppm	2.5	3.3	-2.3	1.2	0.2	-3.0	0.8	0.7	1.2	0.7	2.9	3.3	2.5
Chloride	ppm	4.4	1.2	-1.6	-0.9	-6.0	-4.1	2.4	0.4	2.0	1.1	2.6	2.1	2.1
Calcium	ppm	0	0	-2	0	0	-6	0	0	0	0	1	0	0
Magnesium	ppm	1	0	1	1	3	-3	1	0	0	0	0	0	0
Sodium	ppm	5	0	5	1	1	-1	2	0	1	0	2	0	1
Potassium	ppm	0	-1	-1	-1	-1	-4	0	0	0	0	0	0	0
Aluminium	ppm	0.22	-0.04	0.21	-0.04	-0.16	-0.41	0.41	0.05	0.03	-0.37	-0.34	-0.01	-0.15
Arsenic	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ppm	0.0001	0	-0.0002	0	0	0	0	0	0	0	0	0	0
Chromium	ppm	0	0	0.003	0	0	0	0	0.002	0.002	0	0	0	0
Copper	ppm	0.002	-0.013	0.019	-0.003	0.002	0.003	0.007	-0.001	0.003	-0.003	0.001	0	0.002
Lead	ppm	-0.014	0	0.003	0	-0.001	0	0.002	0.001	0.003	-0.004	0	-0.001	-0.001
Manganese	ppm	0.002	0.001	-0.002	0	0	0.176	0.007	0.002	0.004	-0.017	0.004	-0.011	-0.007
Nickel	ppm	0	-0.001	0.017	-0.002	0	0	0	0	0.002	-0.001	0.001	-0.001	0
Selenium	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	ppm	0.000	0.021	-0.127	-0.033	0.016	0.011	0.063	-0.016	0.016	-0.056	0.017	-0.023	-0.028
Boron	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Iron	ppm	0.08	0.31	0.07	0.00	0.00	0.54	0.16	0.11	0.10	-0.36	-0.09	0.00	-0.21
Mercury	ppm	0	0	0	0	0	0	0.0004	0	0	0	0	0	0
Fluoride	ppm	0	0.03	0	0.03	0.01	0	0	0	0	0	0	0	0
Nitrite as N	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate as N	ppm	-0.31	0.55	3.62	-0.60	3.40	-9.80	0.37	0.05	0.05	-0.01	0.23	-0.06	-2.93
Nitrite + Nitrate as N	ppm	-0.31	0.55	3.62	-0.60	3.40	-9.80	0.37	0.05	0.05	-0.01	0.23	-0.06	-2.93

Note: Results shown as below the limit of detection (<) have been taken as zero for the purposes of the comparison.