



CAWTHRON

# Laboratory Report

## Certificate of Analysis: Final

Cawthron Contract Number: 10781

**Project Number: S40651**

**Marlborough District Council**

**PO Box 443**

**BLENHEIM**

**Attention:** Amy Nicholson

**Customer Ref:** No Charge, prepaid on invoice # 90588

**Email Recipients:** Amy Nicholson

### Sample Details

**Laboratory ID:** S40651-1 **Sample Type:** Water

**Date Sampled:** 19/01/2010 11:00

**Description:** P28w/3663 Turnbull Irrigation

**Date Received:** 20/01/2010 09:00

**Customer ID:** 20100164

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.3    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 70     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 70     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 15     | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.17   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.28   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 6.0    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 13     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.14   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 17     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.016  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 5.2    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 15     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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**Report Number:** 320058

**Project Number:** S40651

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# Sample Details

**Laboratory ID:** S40651-2      **Sample Type:** Water  
**Description:** P28w/3390 Aerodrome  
**Customer ID:** 20100165

**Date Sampled:** 19/01/2010 12:55  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.7    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 160    | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 160    | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | 0.66   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 220    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.088  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | 1.4    | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 26     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 1.2    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 37     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.011  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.2    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.42   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | 2      | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 150    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | 0.068  | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-3      **Sample Type:** Water  
**Description:** P28w/3387 Bluegums  
**Customer ID:** 20100166

**Date Sampled:** 19/01/2010 11:45  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.6    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 120    | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 120    | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | 0.27   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 97     | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.14   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | 0.33   | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 30     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 1.2    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 45     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.098  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 10     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.50   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | 2      | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 49     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | 0.028  | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-4      **Sample Type:** Water  
**Description:** TYR-3 Meadowbank Bridge  
**Customer ID:** 20100167

**Date Sampled:** 19/01/2010 10:50  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.6    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 71     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 71     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 8.5    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.17   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 3.0    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 10     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.05   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 17     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.10   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 5.0    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.003  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 11     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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## Sample Details

**Laboratory ID:** S40651-5      **Sample Type:** Water  
**Description:** HMS-1 Homebrook Stream  
**Customer ID:** 20100168

**Date Sampled:** 19/01/2010 10:10  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 6.6    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 100    | g/m <sup>3</sup> as CaCO <sub>3</sub> | API IA 21st Edn 2320 B                    |
| Bicarbonate Alkalinity | 100    | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | 0.21   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 35     | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.22   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.046  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 16     | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 22     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.14   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 22     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.066  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 11     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.16   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | 1      | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 34     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | 0.001  | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-6      **Sample Type:** Water  
**Description:** TYR-4 Borough Weir  
**Customer ID:** 20100169

**Date Sampled:** 19/01/2010 09:30  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 8.1    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 63     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 63     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 6.4    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.16   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 4.5    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 14     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.03   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 18     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.016  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.8    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.002  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 9.0    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-7      **Sample Type:** Water  
**Description:** BRI-1 Branch River  
**Customer ID:** 20100170

**Date Sampled:** 19/01/2010 08:55  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.7    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 74     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 74     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 5.6    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.15   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.062  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 5.0    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 12     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.03   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 21     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | <0.002 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 5.0    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 7.7    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-8      **Sample Type:** Water  
**Description:** MAX-1 Maxwell Stream  
**Customer ID:** 20100171

**Date Sampled:** 19/01/2010 08:20  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.9    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 68     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 68     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 6.7    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.18   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 4.8    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 15     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.05   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 17     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.005  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.7    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 9.4    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-9  
**Description:** TYR-20  
**Customer ID:** 20100172

**Sample Type:** Water

**Date Sampled:** 19/01/2010 08:10

**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.8    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 67     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 67     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 6.2    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.17   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | <0.03  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 4.8    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | 0.009  | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH <sub>3</sub> H      |
| Silica                 | 15     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.05   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 17     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.010  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.7    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.001  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 8.7    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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**Report Number:** 321481  
**Project Number:** S40651  
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# Sample Details

**Laboratory ID:** S40651-10      **Sample Type:** Water  
**Description:** P28w/2139 Turnbull Domestic  
**Customer ID:** 20100173

**Date Sampled:** 19/01/2010 10:30  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.1    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 73     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 73     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 9.9    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.14   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.18   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 4.6    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 16     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.06   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 18     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.025  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 5.4    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 12     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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# Sample Details

**Laboratory ID:** S40651-11      **Sample Type:** Water  
**Description:** P28w/4066 Honey Factory  
**Customer ID:** 20100174

**Date Sampled:** 19/01/2010 09:10

**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 6.8    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 60     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 60     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 6.7    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.12   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.69   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 5.0    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 16     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.02   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 15     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.006  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.0    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | <1     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 9.6    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | <0.001 | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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**Report Number:** 320058  
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# Sample Details

**Laboratory ID:** S40651-12      **Sample Type:** Water  
**Description:** P28w/2858 Westenra  
**Customer ID:** 20100175

**Date Sampled:** 19/01/2010 08:40  
**Date Received:** 20/01/2010 09:00

| Analysis               | Result | Units                                 | Method                                    |
|------------------------|--------|---------------------------------------|-------------------------------------------|
| pH                     | 7.2    | -                                     | APHA 21st Edn 4500 H B                    |
| Alkalinity             | 72     | g/m <sup>3</sup> as CaCO <sub>3</sub> | APHA 21st Edn 2320 B                      |
| Bicarbonate Alkalinity | 72     | g/m <sup>3</sup> as HCO <sub>3</sub>  | APHA 21st Edn 2320 B                      |
| Bromide                | <0.15  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Chloride               | 10     | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Fluoride               | 0.20   | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Nitrate-N              | 0.091  | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Sulphate               | 4.5    | g/m <sup>3</sup>                      | APHA 21st Edn 4110 B                      |
| Ammonia-N              | <0.005 | g/m <sup>3</sup>                      | APHA 21st Edn 4500 NH3 H                  |
| Silica                 | 14     | g/m <sup>3</sup>                      | APHA 21st Edn 4500-SiO <sub>2</sub> F mod |
| Boron                  | 0.06   | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Calcium                | 16     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Iron                   | 0.022  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Magnesium              | 4.8    | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Manganese              | 0.003  | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Potassium              | 1      | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Sodium                 | 13     | g/m <sup>3</sup>                      | APHA 21st Edn 3120B Filtered. ICP-OES     |
| Arsenic                | 0.001  | g/m <sup>3</sup>                      | APHA 21st Edn 3114 B & C                  |



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