

Winstone Aggregates
 541 Hebden Cres
 PO Box 31-447
 LOWER HUTT 5040
 Attention: Kristian Otto

Analytical Report

Report Number: 18/14854
 Issue: 1
 03 April 2018

| Sample | Site | Map Ref. | Date Sampled | Date Received | Order No. |
|----------------------------|----------------------|------------------------|------------------|-------------------|-----------|
| 18/14854-01 | Miscellaneous Sample | | 27/03/2018 10:25 | 27/03/2018 13:59 | 18399217 |
| Notes: Winstone Bore | | | | | |
| Test | Result | Units | Comments | Signatory | |
| 0001 pH | 6.2 | | | Jennifer Mont KTP | |
| 0052 Alkalinity - Total | 24 | g CaCO3/m ³ | | Jennifer Mont KTP | |
| 0055 Conductivity at 25°C | 10.4 | mS/m | | Jennifer Mont KTP | |
| 0602 Chloride | 8.94 | g/m ³ | | Shanel Kumar KTP | |
| 0605 Nitrate - Nitrogen | 0.56 | g/m ³ | | Shanel Kumar KTP | |
| 1642 Total Hardness | 29 | g CaCO3/m ³ | | Shanel Kumar KTP | |
| 1800 Aluminium - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP | |
| 1810 Calcium - Dissolved | 8.76 | g/m ³ | | Shanel Kumar KTP | |
| 1819 Iron - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP | |
| 1822 Magnesium - Dissolved | 1.75 | g/m ³ | | Shanel Kumar KTP | |
| 1823 Manganese - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP | |
| 5007 TPH C7 - C9 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5010 TPH C10 - C12 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5012 TPH C13 - C19 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5015 TPH C20 - C26 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5021 TPH C27 - C37 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5040 Maximum TPH Content | < 0.5 | mg/L | | Alan Stanley KTP | |
| M0408 Faecal Coliforms | < 1 | cfu/100mL | | Maria Norris KTP | |
| M0409 E. coli | < 1 | cfu/100mL | | Maria Norris KTP | |

| Sample | Site | Map Ref. | Date Sampled | Date Received | Order No. |
|----------------------------|----------------------|------------------------|------------------|-------------------|-----------|
| 18/14854-02 | Miscellaneous Sample | | 27/03/2018 09:50 | 27/03/2018 14:00 | 18399217 |
| Notes: 72 Te Roto Bore | | | | | |
| Test | Result | Units | Comments | Signatory | |
| 0001 pH | 6.3 | | | Jennifer Mont KTP | |
| 0052 Alkalinity - Total | 22 | g CaCO3/m ³ | | Jennifer Mont KTP | |
| 0055 Conductivity at 25°C | 9.8 | mS/m | | Jennifer Mont KTP | |
| 0602 Chloride | 8.84 | g/m ³ | | Shanel Kumar KTP | |
| 0605 Nitrate - Nitrogen | 0.52 | g/m ³ | | Shanel Kumar KTP | |
| 1642 Total Hardness | 27 | g CaCO3/m ³ | | Shanel Kumar KTP | |
| 1800 Aluminium - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP | |
| 1810 Calcium - Dissolved | 8.05 | g/m ³ | | Shanel Kumar KTP | |
| 1819 Iron - Dissolved | 0.021 | g/m ³ | | Shanel Kumar KTP | |
| 1822 Magnesium - Dissolved | 1.63 | g/m ³ | | Shanel Kumar KTP | |
| 1823 Manganese - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP | |
| 5007 TPH C7 - C9 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5010 TPH C10 - C12 | < 0.1 | mg/L | | Alan Stanley KTP | |
| 5012 TPH C13 - C19 | < 0.1 | mg/L | | Alan Stanley KTP | |

| Sample | Site | Map Ref. | Date Sampled | Date Received | Order No. |
|------------------------|----------------------|----------|------------------|------------------|------------------|
| 18/14854-02 | Miscellaneous Sample | | 27/03/2018 09:50 | 27/03/2018 14:00 | 18399217 |
| Notes: 72 Te Roto Bore | | | | | |
| Test | Result | Units | Comments | Signatory | |
| 5015 | TPH C20 - C26 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5021 | TPH C27 - C37 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5040 | Maximum TPH Content | < 0.5 | mg/L | | Alan Stanley KTP |
| M0408 | Faecal Coliforms | < 1 | cfu/100mL | | Maria Norris KTP |
| M0409 | E. coli | < 1 | cfu/100mL | | Maria Norris KTP |

| Sample | Site | Map Ref. | Date Sampled | Date Received | Order No. |
|----------------------|-----------------------|----------|------------------------|----------------------------|-------------------|
| 18/14854-03 | Miscellaneous Sample | | 27/03/2018 10:45 | 27/03/2018 14:00 | 18399217 |
| Notes: Winstone Pond | | | | | |
| Test | Result | Units | Comments | Signatory | |
| 0001 | pH | 7.0 | | | Jennifer Mont KTP |
| 0052 | Alkalinity - Total | 17 | g CaCO3/m ³ | | Jennifer Mont KTP |
| 0055 | Conductivity at 25°C | 7.6 | mS/m | | Jennifer Mont KTP |
| 0602 | Chloride | 7.40 | g/m ³ | | Shanel Kumar KTP |
| 0605 | Nitrate - Nitrogen | 0.12 | g/m ³ | | Shanel Kumar KTP |
| 1642 | Total Hardness | 19 | g CaCO3/m ³ | | Shanel Kumar KTP |
| 1800 | Aluminium - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP |
| 1810 | Calcium - Dissolved | 5.84 | g/m ³ | | Shanel Kumar KTP |
| 1819 | Iron - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP |
| 1822 | Magnesium - Dissolved | 1.17 | g/m ³ | | Shanel Kumar KTP |
| 1823 | Manganese - Dissolved | < 0.005 | g/m ³ | | Shanel Kumar KTP |
| 5007 | TPH C7 - C9 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5010 | TPH C10 - C12 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5012 | TPH C13 - C19 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5015 | TPH C20 - C26 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5021 | TPH C27 - C37 | < 0.1 | mg/L | | Alan Stanley KTP |
| 5040 | Maximum TPH Content | < 0.5 | mg/L | | Alan Stanley KTP |
| M0408 | Faecal Coliforms | 31 | cfu/100mL | Above extreme maximum of 1 | Maria Norris KTP |
| M0409 | E. coli | 31 | cfu/100mL | | Maria Norris KTP |

Comments:

Sampled by ELS using approved containers and techniques.

All samples analysed as we receive them. Delivery was within the correct time and temperature conditions.

Test Methodology:

| Test | Methodology | Detection Limit |
|-----------------------|---|--------------------------|
| pH | Dedicated pH meter following APHA 22nd Edition Method 4500 H. | 0.1 |
| Alkalinity - Total | APHA 22nd Edition Method 2320 B | 1 g CaCO3/m ³ |
| Conductivity at 25°C | APHA 22nd Edition Method 2510 B. | 0.1 mS/m |
| Chloride | Ion Chromatography following USEPA 300.0 (modified). | 0.02 g/m ³ |
| Nitrate - Nitrogen | Ion Chromatography following USEPA 300.0 (modified). | 0.01 g/m ³ |
| Total Hardness | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 1 g CaCO3/m ³ |
| Aluminium - Dissolved | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 0.005 g/m ³ |
| Calcium - Dissolved | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 0.01 g/m ³ |
| Iron - Dissolved | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 0.005 g/m ³ |
| Magnesium - Dissolved | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 0.01 g/m ³ |

| Test | Methodology | Detection Limit |
|-----------------------|---|------------------------|
| Manganese - Dissolved | ICP-OES following APHA 22nd Edition Method 3120 B (modified). | 0.005 g/m ³ |
| TPH C7 - C9 | Total Petroleum Hydrocarbon performed by GC-FID. | 0.1 mg/L |
| TPH C10 - C12 | Total Petroleum Hydrocarbon performed by GC-FID | 0.1 mg/L |
| TPH C13 - C19 | Total Petroleum Hydrocarbon performed by GC-FID | 0.1 mg/L |
| TPH C20 - C26 | Total Petroleum Hydrocarbon performed by GC-FID | 0.1 mg/L |
| TPH C27 - C37 | Total Petroleum Hydrocarbon performed by GC-FID | 0.1 mg/L |
| Maximum TPH Content | Total Petroleum Hydrocarbon performed by GC-FID. | 0.5 mg/L |
| Faecal Coliforms | APHA 22nd Edition 9222 D:2012 | 1 cfu/100mL |
| E. coli | APHA 22nd Edition 9222G:2012 | 1 cfu/100mL |

"<" means that no analyte was found in the sample at the level of detection shown. Detection limits are based on a clean matrix and may vary according to individual sample.

g/m³ is the equivalent to mg/L and ppm.

Samples will be retained for a period of time, in suitable conditions appropriate to the analyses requested.

All test methods and confidence limits are available on request. This report must not be reproduced except in full, without the written consent of the laboratory.



Report Released By
Rob Deacon



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