

Integral Laboratories (Pty) Ltd, No. 1 Zandwyk Park, Old Paarl Road (R101), Paarl, 7646

Tel: 021 871 1109

Fax: 086 635 8874

T0417

CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| Sample Description | Bela Bela WTW Raw | | | |
|-----------------------------------|-------------------------------|---------------------------|----------|-----------------------|
| Lab Number | S35213 | | | |
| Parameters | Method | Unit | Results | Date |
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 20.60 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 10.54 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 20.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 5.79 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.29 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 72.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | 17.00 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 4.00 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 6.61 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Dissolved Solids | NSA | mg/L | 25.00 | 2013/01/18 03:32:06PM |
| Turbidity | HACH Turbidity Meter | NTU | 10.20 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | Not Done | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | Not Done | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | Not Done | 2013/01/25 09:36:36AM |

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| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|---------------------|
| Sample Description | Bela Bela WTW Final |
| Lab Number | S35214 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 46.80 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 28.47 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 3.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 11.00 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.32 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 65.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 7.60 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.06 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | 0.60 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 49.00 | 2013/01/18 03:32:06PM |
| Turbidity | HACH Turbidity Meter | NTU | 2.29 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 3.00 | 2013/01/21 10:34:48AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/22 08:57:04AM |

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| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| Sample Description | Bela Bela BH | | | |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Lab Number | S35215 | | | |
| Parameters | Method | Unit | Results | Date |
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 153.20 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 75.67 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 7.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 41.20 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 1.30 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 38.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 14.40 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 7.53 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 287.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 0.64 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 6.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | 9.00 | 2013/01/25 09:36:36AM |

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| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|-----------------------|
| Sample Description | Bela Bela Town Clinic |
| Lab Number | S35216 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 46.80 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 28.47 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 2.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 15.30 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.11 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 41.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 8.10 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.42 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 67.00 | 2013/01/18 03:32:06PM |
| Turbidity | HACH Turbidity Meter | NTU | 2.43 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | No Growth | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/22 08:57:04AM |

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| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|---------------------------|
| Sample Description | Bela Bela Township Clinic |
| Lab Number | S35217 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 48.80 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 28.97 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 5.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 15.60 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.14 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 38.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 5.30 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.34 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | 0.10 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 68.00 | 2013/01/18 03:32:06PM |
| Turbidity | HACH Turbidity Meter | NTU | 2.46 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 2.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/22 08:57:04AM |

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| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|----------------------|
| Sample Description | Bela Bela Jinah Park |
| Lab Number | S35218 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 51.00 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 30.97 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 5.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 15.40 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.23 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 39.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 5.40 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.27 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Dissolved Solids | NSA | mg/L | 67.00 | 2013/01/18 03:32:06PM |
| Turbidity | HACH Turbidity Meter | NTU | 1.32 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 1.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/22 08:57:04AM |

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| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| Sample Description | Bela Bela Radium Reservoir | | | |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Lab Number | S35219 | | | |
| Parameters | Method | Unit | Results | Date |
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 240.00 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 267.00 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 5.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 90.40 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | <0.10 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 43.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | 205.00 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 118.00 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 7.18 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 698.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 8.25 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 8.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | 54.00 | 2013/01/25 09:36:36AM |

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| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|-------------------------|
| Sample Description | Bela Bela Radium Clinic |
| Lab Number | S35220 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 231.20 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 259.00 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 11.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 87.60 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | <0.10 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 40.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | 430.00 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 114.00 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 7.20 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 585.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 4.63 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 21.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | 46.00 | 2013/01/25 09:36:36AM |

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| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|--------------------------|
| Sample Description | Bela Bela Pienaar Clinic |
| Lab Number | S35221 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 108.00 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 56.44 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 4.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 37.50 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.23 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 36.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 12.00 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.26 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 285.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 4.24 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 3.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/22 08:57:05AM |

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| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|----------------------|
| Sample Description | Bela Bela House 1316 |
| Lab Number | S35222 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 98.60 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 54.69 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 7.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 39.10 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 0.14 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 32.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 9.30 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 8.59 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 263.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 0.33 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 41.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | 78.00 | 2013/01/25 09:36:36AM |

Integral Laboratories (Pty) Ltd, No. 1 Zandwyk Park, Old Paarl Road (R101), Paarl, 7646

Tel: 021 871 1109

Fax: 086 635 8874

T0417

CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|--------------------------|
| Sample Description | Bela Bela Rapotokwana BH |
| Lab Number | S35223 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|---------------------------|-----------|-----------------------|
| Chemical Parameters | | | | |
| Alkalinity - Total | *M7 - Total Alkalinity | mg/L as CaCO ₃ | 239.60 | 2013/01/18 03:46:37PM |
| Calcium Hardness | NSA | mg/L as CaCO ₃ | 108.00 | 2013/01/18 03:03:32PM |
| Colour | Spectroquant Pharo | Pt-Co-true | 2.00 | 2013/01/18 12:48:29PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 55.50 | 2013/01/18 11:53:54AM |
| Fluoride | Merck Test Kit | mg/L | 4.20 | 2013/01/18 03:34:56PM |
| Iron | ICP-AES (dissolved - value) | µg/L | 51.00 | 2013/01/23 09:27:00AM |
| Manganese | ICP-AES (dissolved - value) | µg/L | <10 | 2013/01/21 02:10:22PM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 17.40 | 2013/01/21 11:16:42AM |
| Odour | NSA | | None | 2013/01/21 02:32:56PM |
| pH | *M6 - pH at 25°C | pH units | 7.91 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | <0.1 | 2013/01/25 09:50:48AM |
| Total Dissolved Solids | NSA | mg/L | 394.00 | 2013/01/21 09:44:47AM |
| Turbidity | HACH Turbidity Meter | NTU | 3.52 | 2013/01/18 11:44:54AM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | No Growth | 2013/01/25 09:46:33AM |
| Heterotrophic Plate Count | **Mpumamanzi Lab | cfu's/1ml | 6.00 | 2013/01/25 09:42:22AM |
| Total Coliforms | **Mpumamanzi Lab | cfu's/100ml | 1.00 | 2013/01/25 09:36:36AM |

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CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|---------------------------|
| Sample Description | Bela Bela WTTW Raw Sewage |
| Lab Number | S35224 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|-------------|----------|-----------------------|
| Chemical Parameters | | | | |
| Ammonium (NH ₄) | *M1 - Ammonia | mg/L | 86.70 | 2013/01/21 04:44:22PM |
| COD - Unfiltered | *M2 - COD | mg/L | 897.00 | 2013/01/22 12:38:33PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 105.00 | 2013/01/18 11:53:54AM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 7.90 | 2013/01/21 11:16:42AM |
| Orthophosphate (PO ₄) | Merck Test Kit | mg/L | 33.00 | 2013/01/21 11:20:15AM |
| pH | *M6 - pH at 25°C | pH units | 7.20 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Suspended Solids | *M8 - Suspended Solids | mg/L | 472.00 | 2013/01/21 03:53:30PM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | Not Done | 2013/01/25 09:46:33AM |

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CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|-----------------------------|
| Sample Description | Bela Bela WTTW Final Sewage |
| Lab Number | S35225 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|-------------|----------|-----------------------|
| Chemical Parameters | | | | |
| Ammonium (NH ₄) | *M1 - Ammonia | mg/L | 20.10 | 2013/01/21 04:44:22PM |
| COD - Unfiltered | *M2 - COD | mg/L | 73.00 | 2013/01/22 12:38:33PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 65.20 | 2013/01/18 11:53:54AM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 82.50 | 2013/01/21 11:16:42AM |
| Orthophosphate (PO ₄) | Merck Test Kit | mg/L | 18.50 | 2013/01/21 11:20:15AM |
| pH | *M6 - pH at 25°C | pH units | 7.19 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Suspended Solids | *M8 - Suspended Solids | mg/L | <1 | 2013/01/21 03:53:30PM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | 2 420.00 | 2013/01/25 09:46:33AM |

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CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|-----------------------------|
| Sample Description | Bela Bela Radium Raw Sewage |
| Lab Number | S35226 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|-------------|----------|-----------------------|
| Chemical Parameters | | | | |
| Ammonium (NH ₄) | *M1 - Ammonia | mg/L | 41.10 | 2013/01/21 04:44:22PM |
| COD - Unfiltered | *M2 - COD | mg/L | 413.00 | 2013/01/22 12:38:33PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 119.00 | 2013/01/18 11:53:54AM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 8.00 | 2013/01/21 11:16:42AM |
| Orthophosphate (PO ₄) | Merck Test Kit | mg/L | 11.60 | 2013/01/21 11:20:15AM |
| pH | *M6 - pH at 25°C | pH units | 7.63 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Suspended Solids | *M8 - Suspended Solids | mg/L | 286.00 | 2013/01/21 03:53:30PM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | Not Done | 2013/01/25 09:46:33AM |

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CERTIFICATE OF ANALYSIS

| | | | |
|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|-------------------------------|
| Sample Description | Bela Bela Radium Final Sewage |
| Lab Number | S35227 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|-------------|---------|-----------------------|
| Chemical Parameters | | | | |
| Ammonium (NH ₄) | *M1 - Ammonia | mg/L | 28.10 | 2013/01/21 04:44:22PM |
| COD - Unfiltered | *M2 - COD | mg/L | 85.00 | 2013/01/22 12:38:33PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 100.00 | 2013/01/18 11:53:54AM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 6.40 | 2013/01/21 11:16:42AM |
| Orthophosphate (PO ₄) | Merck Test Kit | mg/L | 6.80 | 2013/01/21 11:20:15AM |
| pH | *M6 - pH at 25°C | pH units | 8.18 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Suspended Solids | *M8 - Suspended Solids | mg/L | 106.00 | 2013/01/21 03:53:30PM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | 344.00 | 2013/01/25 09:46:33AM |

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|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

| | |
|---------------------------|------------------------------|
| Sample Description | Bela Bela Pienaar Raw Sewage |
| Lab Number | S35228 |

| Parameters | Method | Unit | Results | Date |
|-----------------------------------|-------------------------------|-------------|----------|-----------------------|
| Chemical Parameters | | | | |
| Ammonium (NH ₄) | *M1 - Ammonia | mg/L | 85.20 | 2013/01/21 04:44:22PM |
| COD - Unfiltered | *M2 - COD | mg/L | 422.00 | 2013/01/22 12:38:33PM |
| Conductivity | *M4 - Electrical Conductivity | mS/m | 119.00 | 2013/01/18 11:53:54AM |
| Nitrate (NO ₃) | *M5 - Nitrate | mg/L | 10.00 | 2013/01/21 11:16:42AM |
| Orthophosphate (PO ₄) | Merck Test Kit | mg/L | 14.20 | 2013/01/21 11:20:15AM |
| pH | *M6 - pH at 25°C | pH units | 7.95 | 2013/01/18 03:50:10PM |
| Residual chlorine | Merck Test Kit | mg/L | | 2013/01/30 01:14:39PM |
| Total Suspended Solids | *M8 - Suspended Solids | mg/L | 116.00 | 2013/01/21 03:53:30PM |
| Microbiological Parameters | | | | |
| E. Coli | **Mpumamanzi Lab | cfu's/100ml | Not Done | 2013/01/25 09:46:33AM |

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|------------------------------|---|-------------------------------|----------|
| Company | Bela Bela Municipality | Service Request Number | SR15641 |
| Customer Address | Private Bag X 1609, Bela Bela, Limpopo, Bela Bela, Limpopo, South Africa, 0480 | Date of Certificate: | 8/2/2013 |
| Contact Person | Archie Magana | | |
| Date of Sampling | 9/1/2013 | | |
| Date of Reveal at Lab | 10/1/2013 | | |

Authorised By:



N Africa



S Salie

(Signature/s authorised signatories)

All results have been reviewed and authorised by a technical signatory

1. Sampling is outside the laboratory's scope of accreditation, where applicable free and total chlorine results are supplied by the sampling officer.
2. This report shall not be reproduced except in full, without written approval from the laboratory.
3. Results reflected on this report relate only to the items as received and analysed.
4. Uncertainty of measurement for accredited analysis will be provided on request
5. Reports can be emailed, but the laboratory will not be responsible for changes to emailed reports.
6. Parameters indicated by an * are accredited.
7. Parameters indicated by ** are outsourced.
8. ICP results reported as 'Dissolved' - sample has been filtered using a 0.45 µm filter.
9. The following abbreviations are applicable:
 - NS - Not Settling
 - ND -Not Detected
 - NG - No Growth
10. Where applicable, limits reflected are based on SANS 241-2011 and General Effluent Standards.
11. Time stamps reflect time of analysis completion and final capturing of analytical results.

Certificate Number: SR15641

Ammended: Y/N