# Annex I: Boreholes and Piezometers of the Bonriki Groundwater Reserve: Summary Details and Lithology Descriptions

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN1** | Murphy (1981) | 1980 | Borehole: salinity monitoring, available | 0 | 1.9 | 2.06 | 0.16 | 1.90 | White gravelly sand, well packed to dense with some loose zone | **Holocene:** coral sediments  | Medium sand to gravel |
| 1.9 | 2.7 | 0.16 | -0.64 | 0.80 | Encountered coral/ limestone conglomerate boulders |
| 2.7 | 7.25 | -0.64 | -5.19 | 4.55 | White calcareous limestone consisting of fresh coral reef- limestone with fine sand and matrix, material is slightly fractured with some weathering and older limestone sequence with sandstone  | Hard coral rock formation |
| 7.25 | 9 | -5.19 | -6.94 | 1.75 | White medium to fine grained sand, lightly cemented, with some gravel and with some coral reef zone | Medium sand to gravel |
| 9 | 12 | -6.94 | -9.94 | 3.00 | White medium to fine grained sand (calcareous) with some gravel, well packed to dense |
| 12 | 15 | -9.94 | -12.94 | 3.00 | White medium grained sand with some coral gravel and cobbles well packed to dense |
| 15 | 16.5 | -12.94 | -14.44 | 1.50 | White medium grained sand with some gravel and coral conglomerate cobbles well packed to dense |
| 16.5 | 18 | -14.44 | -15.94 | 1.50 | White medium grained sand with some gravel and coral conglomerate cobbles well packed to dense, slightly cemented |
| 18 | 21 | -15.94 | -18.94 | 3.00 | White medium grained sand with coral conglomerate cobbles well packed to dense, slightly cemented and limestone |
| **BN1B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.3 | 2.28 | 1.98 | 0.3 | Soil, black to grey, sand, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.3 | 2.2 | 1.98 | 0.08 | 1.9 | Gravelly sand, fine to medium, white |
| 2.2 | 2.4 | 0.08 | -0.12 | 0.2 | Sandy gravel, coral boulders |
| 2.4 | 2.6 | -0.12 | -0.32 | 0.2 |  Coral rock hard formation | Coral rock hard formation |

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| **BN2** | Murphy (1981) | 1980 | Borehole: salinity monitoring, available | 0 | 0.3 | 1.66 | 1.36 | 0.3 | Grey silty sand with organic matter | **Holocene**: coral sediments  | Medium sand to gravel  |
| 0.3 | 5.75 | 1.36 | -4.09 | 5.45 | White medium grained sand with some gravel and coral conglomerate cobbles well packed  |
| 5.75 | 10.5 | -4.09 | -8.84 | 4.75 | White medium to fine grained sand with some gravel, well packed to dense small amount of fines (silt) |
| 10.5 | 12.55 | -8.84 | -10.89 | 2.05 | White gravelly sand with some limestone and coral conglomerate boulders | Coral rock, boulders and conglomerate hard formation |
| 12.55 | 14.7 | -10.89 | -13.04 | 2.15 | Medium grained sand with some gravel, loose to well packed | Medium sand to gravel  |
| 14.7 | 15.1 | -13.04 | -13.44 | 0.4 | Limestone conglomerate boulder- Fresh limestone with some solution cavities | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -13.04 mAMSL |
| 15.1 | 15.55 | -13.44 | -13.89 | 0.45 | Fresh to slightly weathered coral reef with vertical joints | Old fractured limestone |
| 15.55 | 21.05 | -13.89 | -19.39 | 5.5 | Older white Limestone, fractured, weathered to fresh, cemented deposits, medium to fine sand matrix |
| 21.05 | 24 | -19.39 | -22.34 | 2.95 | Older white Limestone, badly fractured, weathered, medium to fine sand matrix, some solution cavities |
| **BN2B** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey available | 0 | 3.5 | 2.12 | -1.38 | 3.5 | Firm limestone | **Holocene:** coral sediments  | Hard coral rock formation |
| 3.5 | 10.5 | -1.38 | -8.38 | 7 | Soft sand, broken limestone rubble | Medium sand to gravel  |
| 10.5 | 12.5 | -8.38 | -10.38 | 2 | Hard limestone | Hard coral rock formation  |
| **BN3 original** | Murphy (1981) | 1980 | Located at 10m from BN2, same geological description, backfilled in 1983 | 0 | 14 | 2.12 | -11.88 | 14 |   | As per BN2 |
| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN3 (BH1)** | Murphy (1981) | 1980 | Borehole: salinity monitoring, destroyed | 0 | 0.7 | 1.84 | 1.14 | 0.7 | Grey gravelly sand, medium to fine grained | **Holocene**: coral sediments | Medium sand to gravel |
| 0.7 | 0.9 | 1.14 | 0.94 | 0.2 | Limestone rock (hardpan) |
| 0.9 | 11.6 | 0.94 | -9.76 | 10.7 | Light grey to white sand medium to fine grained, with cobbles of cemented sand and coral pieces, some shell, loose to well packed |
| 11.6 | 21.7 | -9.76 | -19.86 | 10.1 | White coral very fractured | Hard coral rock formation |
| 21.7 | 24.5 | -19.86 | -22.66 | 2.8 | Older limestone formation | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -19.86 mAMSL |
| Old fractured limestone |
| **BN4** | Murphy (1981) | 1980 | Borehole: salinity monitoring, available | 0 | 1.85 | 1.84 | -0.01 | 1.85 | Gravel (old runway pavement, Medium to fine grained sand (Old runway base course material), Grey slightly silty fine sand, loose to well packed highly organic | **Holocene**: coral sediments | Medium sand to gravel |
| 1.85 | 2.65 | -0.01 | -0.81 | 0.8 | White medium grained sand with some gravel and coral conglomerate cobbles well packed to dense |
| 2.65 | 6.3 | -0.81 | -4.46 | 3.65 | White medium grained sand with some coral gravel and cobbles well packed to dense |
| 6.3 | 11.75 | -4.46 | -9.91 | 5.45 | White medium to fine grained sand with some gravel, silt, lightly cemented |
| 11.75 | 12.25 | -9.91 | -10.41 | 0.5 | White fresh coral reef  | Hard coral rock formation |
| 12.25 | 15.35 | -10.41 | -13.51 | 3.1 | White medium to fine grained sand with some gravel, loose to well packed | Medium sand to gravel |
| 15.4 | 15.4 | -13.51 | -13.56 | 0 | Older white Limestone, calcareous deposits, fractured, weathered  | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -13.51 mAMSL |
| 15.4 | 16.45 | -13.56 | -14.61 | 1.05 | Old fractured limestone |
| 16.45 | 30 | -14.61 | -28.16 | 13.55 | Older white Limestone, badly fractured, weathered, medium to fine sand matrix |
| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN4B** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey, destroyed | 0 | 1.5 | 1.84 | 0.34 | 1.5 | Loose rubble, grey sandy soil | **Holocene:**  coral sediments  | Medium sand to gravel |
| 1.5 | 3.5 | 0.34 | -1.66 | 2 | White sand lightly cemented  |
| 3.5 | 10.5 | -1.66 | -8.66 | 7 | White sand fine to medium , shell fragments and limestone pebbles, packed at base |
| 10.5 | 12.5 | -8.66 | -10.66 | 2 | Firm limestone | Hard coral rock formation  |
| **BN4C** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.21 | 2.01 | 1.80 | 0.21 |  Soil, grey sand and gravel, roots and organic matter | **Holocene:** coral sediments  | Medium sand to gravel |
| 0.21 | 0.4 | 1.80 | 1.61 | 0.19 |  Gravelly sand, fine to medium, white, dense |
| 0.4 | 1.64 | 1.61 | 0.37 | 1.24 |  Silt, fine to very fine black, grey formation, anoxic environment, impermeable layer | Fine sand to silt |
| 1.64 | 3.2 | 0.37 | -1.19 | 1.56 | Silty sand, fine to medium, cobbles of coral, boulders |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN5** | Murphy (1981) | 1980 | Borehole: salinity monitoring, destroyed | 0 | 0.35 | 1.65 | 1.30 | 0.35 | Grey silty medium to fine grained sand with organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.35 | 7 | 1.30 | -5.35 | 6.65 | White medium to coarse grained sand/ fine gravel consisting of tiny marine shells, limestone and coral gravel, lightly cemented, well packed  |
| 7 | 10.35 | -5.35 | -8.70 | 3.35 | Becoming medium sand below 7m, white medium grained sand, well packed, lightly cemented |
| 10.35 | 12.4 | -8.70 | -10.75 | 2.05 | Harder band of gravelly sand followed by small pieces of coral reef of older limestone, newer limestone, followed by gravelly sandy; gravelly sand with limestone and coral conglomerate cobbles and boulders | Coral rock, boulders and conglomerate hard formation |
| 12.4 | 19 | -10.75 | -17.35 | 6.6 | Coarse to medium grained sand, well packed to dense, some areas could be described as fine grained sand with some pieces of coral reef and some gravel, well packed, lightly cemented | Medium sand to gravel |
| 19 | 19 | -17.35 | -17.35 | 0 | Older white Limestone, calcareous deposits, fractured, weathered, fine and silt matrix, coral reef | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -17.35 mAMSL |
| 19 | 27 | -17.35 | -25.35 | 8 | Old fractured limestone |

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| **BN6** | Murphy (1981) | 1980 | Borehole: salinity monitoring, backfilled in 1983 | 0 | 7.6 | 1.73 | -5.87 | 7.6 | White find gravel/ coarse sand deposit consists of calcareous limestone, marine shells and coral pieces all about fine gravel coarse sand size, well packed with some dense zones also lightly cemented | **Holocene:** coral sediments  | Medium sand to gravel |
| 7.6 | 11.7 | -5.87 | -9.97 | 4.1 | White medium grained sand very loose, lightly cemented |
| 11.7 | 12 | -9.97 | -10.27 | 0.3 | Limestone boulder | Hard coral rock formation |
| 12 | 14.5 | -10.27 | -12.77 | 2.5 | White medium to fine grained sand , loose, lightly cemented some gravel | Medium sand to gravel |
| 14.5 | 15 | -12.77 | -13.27 | 0.5 | Limestone boulder | Hard coral rock formation |
| 15 | 17 | -13.27 | -15.27 | 2 | Gravelly medium to fine grained sand | Medium sand to gravel |
| 17.4 | 18 | -15.27 | -16.27 | 0.6 | Limestone conglomerate  |
| 18 | 18 | -16.27 | -16.27 | 0 |   | **Thurber discontinuity:** unconformity depth -16.27 mAMSL (?)  |

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| **BN7** | Murphy (1981) | 1980 | Borehole: salinity monitoring, available | 0 | 0.35 | 2.89 | 2.54 | 0.35 | Grey silty medium to fine grained sand with organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.35 | 2.6 | 2.54 | 0.29 | 2.25 | White fine gravel/ coarse sand deposit consisting of limestone and shells and calcareous sand, loose to well packed |
| 2.6 | 5.9 | 0.29 | -3.01 | 3.30 | Newer limestone, fresh with some fractured zones, deposit comprises highly cemented calcareous materials coral conglomerate, sand very dense | Hard coral rock formation: maybe Reef flat (?) |
| 5.9 | 8 | -3.01 | -5.11 | 2.10 | Limestone as above, but much more weathering has occurred, very badly fractured and highly permeable |
| 8 | 15.2 | -5.11 | -12.31 | 7.20 | White medium grained sand with some gravel pieces well packed, no circulation | Medium sand to gravel |
| 15.7 | 15.7 | -12.31 | -12.81 | 0.00 | Older white limestone, very weathered with some fractures fine sand matrix | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -12.31 mAMSL |
| 15.7 | 21 | -12.81 | -18.11 | 5.30 | Old fractured limestone |
| **BN7B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.6 | 3.06 | 2.46 | 0.60 | Soil, black to grey sand, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.6 | 2.1 | 2.46 | 0.96 | 1.50 |  Gravelly sand, fine to medium |
| 2.1 | 2.51 | 0.96 | 0.55 | 0.41 |  Gravelly sand, fine to medium, boulders of conglomerates |
| 2.51 | 2.76 | 0.55 | 0.30 | 0.25 |  Reef flat, beach rock, hard pan, conglomerate formation | Reef flat |

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| **BN8** | Murphy (1981) | 1980 | Borehole: salinity monitoring, backfilled in 1983 | 0 | 2.7 | 3.36 | 0.66 | 2.7 | White fine gravel / coarse sand loose to well packed | **Holocene**: coral sediments  | Medium sand to gravel |
| 2.7 | 6 | 0.66 | -2.64 | 3.3 | newer limestone, fresh with some fractured zones, badly fractured zone around 4m | Hard coral rock formation |
| 6 | 13.5 | -2.64 | -10.14 | 7.5 | White gravelly, coarse to medium grained sand with some coral conglomerate cobbles from 8.8 to 9.0m or coral reef boulder 12 and 13.2m | Medium sand to gravel |
| **BN9** | Murphy (1981) | 1980 |  Borehole: salinity monitoring, destroyed | 0 | 5 | 1.60 | -3.40 | 5 | White fine gravel / coarse sand with some larger stones, lightly cemented, with silty sandy gravel | **Holocene**: coral sediments  | Medium sand to gravel |
| 5 | 10.8 | -3.40 | -9.20 | 5.8 | White coral sand, medium to fine grained, lightly cemented well packed, this deposit is made up of small shells and tiny marine animal remains |
| 10.8 | 11.2 | -9.20 | -9.60 | 0.4 | White fresh coral reef  | Hard coral rock formation |
| 11.2 | 15 | -9.60 | -13.40 | 3.8 | White gravelly sand with some limestone and coral conglomerate boulders, 12.3,12.7,13.1 and 14.8 | Medium sand to gravel |
| 15 | 21.6 | -13.40 | -20.00 | 6.6 | White gravelly medium to fine grained sand with some coral pieces, well packed to dense, white medium to fine |
| 21.6 | 21.6 | -20.00 | -20.00 | 0 | Older white limestone, very weathered with some fractures fine sand matrix | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -20 mAMSL |
| 21.6 | 24 | -20.00 | -22.40 | 2.4 | Old fractured limestone |

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| **BN10** | Murphy (1984) | 1984 |  Borehole: salinity monitoring, destroyed | 0 | 1.8 | 2.22 | 0.42 | 1.8 | Medium dense to dense with gravelly sand with some loose zones | **Holocene**: coral sediments  | Medium sand to gravel |
| 1.8 | 7.25 | 0.42 | -5.03 | 5.45 | White calcareous LIMESTONE: consisting of fresh coral reef and limestone with a fine sand matrix, moderately weathered and slightly fractured | Hard coral rock formation |
| 7.25 | 18.8 | -5.03 | -16.58 | 11.55 | Medium dense to dense white medium to fine grained sand lightly cemented with some gravel zone | Medium sand to gravel |
| 18.8 | 18.8 | -16.58 | -16.58 | 0 | Older white Limestone, highly fractured and weathered | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -16.58 mAMSL |
| 18.85 | 22 | -16.58 | -19.78 | 3.15 | Old fractured limestone |
| **BN11** | Murphy (1986); Murphy (1987) | 1985 |  Borehole: salinity monitoring, available | 0 | 21 | 1.93 | -19.07 | 21 |   | No geological log description recorded |
| **BN11B** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey, available | 0 | 11.75 | 2.02 | -9.73 | 11.75 |   | No geological log description recorded |
| **BN12** | Murphy (1986); Murphy (1987) | 1985 |  Borehole: salinity monitoring, destroyed | 0 | 24 | 1.59 | -22.41 | 24 |   | No geological log description recorded |
| **BN13** | Murphy (1986); Murphy (1987) | 1985 | Borehole: salinity monitoring, available | 0 | 27 | 2.66 | -24.34 | 27 |   | No geological log description recorded |

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| **BN13B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.3 | 2.73 | 2.43 | 0.3 | Soil, filled with grey gravel and organic matter black to grey sand | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.3 | 2.2 | 2.43 | 0.53 | 1.9 | Sandy gravel to gravelly sand, yellow, fine to medium sand (mm to cm) to medium gravel with some cobbles (coral pieces) (cm to dm) lightly cemented |
| 2.2 | 2.8 | 0.53 | -0.07 | 0.6 |  Gravel and coral boulders (dm), pieces of coral colour grey to green and fresh coral white |
| **BN14** | Murphy (1986); Murphy (1987) | 1985 | Borehole: salinity monitoring, destroyed | 0 | 24 | 1.92 | -22.08 | 24 |   | No geological log description recorded |
| **BN15** | Murphy (1986); Murphy (1987) | 1985 | Borehole: salinity monitoring, available | 0 | 24 | 2.72 | -21.28 | 24 |   | No geological log description recorded |
| **BN15B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.5 | 2.95 | 2.45 | 0.5 | Soil, black to grey sand, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.5 | 1.5 | 2.45 | 1.45 | 1 |  Silty sand, fine to medium, white  |
| 1.5 | 2.1 | 1.45 | 0.85 | 0.6 |  Gravelly sand, medium to coarse coral boulders |
| 2.1 | 3.1 | 0.85 | -0.15 | 1 | Sandy gravel, medium sand to coarse, coral boulders |
| 3.1 | 3.25 | -0.15 | -0.30 | 0.15 | Coral rock hard formation |

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| **BN16** | Murphy (1986); Murphy (1987) | 1985 | Borehole: salinity monitoring, destroyed | 0 | 30 | 3.29 | -26.71 | 30 |   | No geological log description recorded |
| **BN17** | Murphy (1986); Murphy (1987) | 1985 | Borehole: salinity monitoring, destroyed | 0 | 27 | 1.56 | -25.44 | 27 |   | No geological log description recorded |
| **BN18 (BH2)** | Murphy (1981) | 1980 |  Borehole: salinity monitoring, destroyed | 0 | 0.45 | 2.03 | 1.58 | 0.45 | Light grey silty fine sand | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.45 | 1.45 | 1.58 | 0.58 | 1 | Medium to fine grained white sand with coral conglomerate and gravel |
| 1.45 | 3.25 | 0.58 | -1.22 | 1.8 | Coral gravel with boulders and some sand |
| 3.25 | 10.9 | -1.22 | -8.87 | 7.65 | Coarse to medium grained sand with some cobbles below 3.25 to fine sand slightly more dense |
| 10.9 | 12 | -8.87 | -9.97 | 1.1 | White coral reef very fractured to fresh  | Hard coral rock formation |
| 12 | 17.1 | -9.97 | -15.07 | 5.1 | Fine grained sand alternately; gravelly medium sand, with badly fractured pieces of coral | Medium sand to gravel |
| 17.1 | 17.1 | -15.07 | -15.07 | 0 | Older limestone, fine sand matrix, badly fractured, weathered | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -15.07 mAMSL |
| 17.1 | 25.2 | -15.07 | -23.17 | 8.1 | Old fractured limestone |

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| **BN19** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 1 | 1.80 | 0.80 | 1 | Dark grey soil | **Holocene:** coral sediments | Medium sand to gravel |
| 1 | 11.5 | 0.80 | -9.70 | 10.5 | Soft limestone, sand |
| 11.5 | 12.5 | -9.70 | -10.70 | 1 | Hard limestone | Hard coral rock formation |
| 12.5 | 15.2 | -10.70 | -13.40 | 2.7 | Poorly cemented sand and pebbles | Medium sand to gravel |
| **BN20** | OEC, PPK & Erasito (2001) | 2000 | Borehole: salinity monitoring | 0 | 0.5 | 1.27 | 0.77 | 0.5 | Dark, grey and white gravelly sand, medium to fine, well packed to dense with some loose zone, with organic matter, loose rubble, moist ( possible aircraft pavement) | **Holocene:** coral sediments | Medium sand to gravel |
| 0.5 | 8 | 0.77 | -6.73 | 7.5 | White sand fine , gravel , shell fragments , coarse gravel |
| 8 | 9 | -6.73 | -7.73 | 1 | Hard layer |
| 9 | 14 | -7.73 | -12.73 | 5 | broken Limestone | Hard coral rock formation |
| 14 | 14 | -12.73 | -12.73 | 0 | Hard limestone | **Pleistocene**: coral limestone | **Thurber discontinuity**: unconformity depth -12.73 mAMSL (?) |
| 14 | 15.2 | -12.73 | -13.93 | 1.2 | Old fractured limestone |
| **BN20B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.5 | 1.29 | 0.79 | 0.5 | Soil, black to grey sand and gravel, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.5 | 1.5 | 0.79 | -0.21 | 1 | Gravelly sand, yellow, fine to medium |
| 1.5 | 2.6 | -0.21 | -1.31 | 1.1 | Sandy gravel, medium to coarse (dm), coral cobbles, few boulders, white |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN21** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 4.5 | 1.51 | -2.99 | 4.5 | Firm limestone | **Holocene**: coral sediments  | Hard coral rock formation |
| 4.5 | 8 | -2.99 | -6.49 | 3.5 | Soft sand | Medium sand to gravel |
| 8 | 11 | -6.49 | -9.49 | 3 | Hard band | Hard coral rock formation |
| 11 | 21.4 | -9.49 | -19.89 | 10.4 | Limestone hard | (?) | (?) |
| **BN22** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 2 | 1.41 | -0.59 | 2 | Loose reef rubble | **Holocene**: coral sediments  | Medium sand to gravel |
| 2 | 7 | -0.59 | -5.59 | 5 | Firm Limestone | Hard coral rock formation |
| 7 | 11 | -5.59 | -9.59 | 4 | Loose sand and pebbles | Medium sand to gravel |
| 11 | 21 | -9.59 | -19.59 | 10 | Limestone fairly uniform hard | (?) | (?) |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN23** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 2 | 2.71 | 0.71 | 2 | Hard limestone cap rock  | **Holocene**: coral sediments  | Hard coral rock formation |
| 2 | 4.5 | 0.71 | -1.79 | 2.5 | Yellow sand lightly cemented  | Medium sand to gravel |
| 4.5 | 7.5 | -1.79 | -4.79 | 3 | Soft broken limestone and loose coral | Hard coral rock formation |
| 7.5 | 21 | -4.79 | -18.29 | 13.5 | Firm limestone | (?) | (?) |
| **BN23B** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.9 | 2.78 | 1.88 | 0.9 | Soil, black to grey sand and gravel, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.9 | 2.3 | 1.88 | 0.48 | 1.4 | Gravelly sand, medium to coarse and coral cobbles |
| 2.3 | 3.2 | 0.48 | -0.42 | 0.9 | Silty sand, fine to medium with gravel and coral boulders  |
| 3.2 | 3.58 | -0.42 | -0.80 | 0.38 | Very hard limestone |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN24** | OEC, PPK & Erasito (2001) | 2000 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 1.5 | 2.21 | 0.71 | 1.5 | Black sand, loose rubble | **Holocene**: coral sediments  | Medium sand to gravel |
| 1.5 | 5 | 0.71 | -2.79 | 3.5 | Yellow sand, lightly cemented sandy limestone |
| 5 | 10 | -2.79 | -7.79 | 5 | Sand  |
| 10 | 13 | -7.79 | -10.79 | 3 | Sand lightly cemented |
| 13 | 13 | -10.79 | -10.79 | 0 | Firm limestone | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -10.79 mAMSL (?) |
| 13 | 22 | -10.79 | -19.79 | 9 | Old fractured limestone |
| **BN25** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 3 | 1.34 | -1.66 | 3 | White limestone | **Holocene**: coral sediments  | Medium sand to gravel |
| 3 | 9.5 | -1.66 | -8.16 | 6.5 | White and Yellow sand shells |
| 9.5 | 16.7 | -8.16 | -15.36 | 7.2 | White sandy limestone firm |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN26** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 1.5 | 1.64 | 0.14 | 1.5 | White limestone, grey sandy soil | **Holocene**: coral sediments  | Medium sand to gravel |
| 1.5 | 6.5 | 0.14 | -4.86 | 5 | White limestone | Hard coral rock formation |
| 6.5 | 11.5 | -4.86 | -9.86 | 5 | White sand shells and hard bands | Medium sand to gravel |
| 11.5 | 13.5 | -9.86 | -11.86 | 2 | Limestone hard broken | Hard coral rock formation |
| 13.5 | 15 | -11.86 | -13.36 | 1.5 | Sand | Medium sand to gravel |
| 15 | 15 | -13.36 | -13.36 | 0 | White limestone firm uniform  | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -13.36 mAMSL (?) |
| 15 | 22 | -13.36 | -20.36 | 7 | Old fractured limestone |
| 22 | 23 | -20.36 | -21.36 | 1 | Sand |
| 23 | 25 | -21.36 | -23.36 | 2 | Limestone firm |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN27** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 1 | 1.60 | 0.60 | 1 | Grey Soil, sandy cement | **Holocene**: coral sediments  | Medium sand to gravel |
| 1 | 6 | 0.60 | -4.40 | 5 | Loose reef materiel hard bands | Hard coral rock formation |
| 6 | 10.5 | -4.40 | -8.90 | 4.5 | Loose limestone sand | Medium sand to gravel |
| 10.5 | 12.5 | -8.90 | -10.90 | 2 | White hard limestone | Hard coral rock formation |
| 12.5 | 14.5 | -10.90 | -12.90 | 2 | Soft limestone | Medium sand to gravel |
| 14.5 | 14.5 | -12.90 | -12.90 | 0 | Firm limestone | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -12.90 mAMSL (?) |
| 14.5 | 22 | -12.90 | -20.40 | 7.5 | Old fractured limestone |
| **BN28** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 0.5 | 1.41 | 0.91 | 0.5 | Grey soil | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.5 | 8 | 0.91 | -6.59 | 7.5 | Loose limestone coral and shells |
| 8 | 10.5 | -6.59 | -9.09 | 2.5 | Sand and minor hard band |
| 10.5 | 12.5 | -9.09 | -11.09 | 2 | Very hard limestone | Hard coral rock formation |
| 12.5 | 12.5 | -11.09 | -11.09 | 0 | Firm limestone, minor soft bands | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -11.09 mAMSL (?) |
| 12.5 | 22 | -11.09 | -20.59 | 9.5 | Old fractured limestone |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN29** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 2.5 | 1.52 | -0.98 | 2.5 | Yellow very firm cemented limestone | **Holocene**: coral sediments  | Medium sand to gravel |
| 2.5 | 3.5 | -0.98 | -1.98 | 1 | Sand and limestone |
| 3.5 | 4.5 | -1.98 | -2.98 | 1 | Very hard limestone | Hard coral rock formation |
| 4.5 | 10 | -2.98 | -8.48 | 5.5 | Firm limestone lightly cemented |
| 10 | 11.8 | -8.48 | -10.28 | 1.8 | Soft sand | Medium sand to gravel |
| 11.8 | 14 | -10.28 | -12.48 | 2.2 | Very hard limestone | Hard coral rock formation |
| 14 | 14 | -12.48 | -12.48 | 0 | Firm limestone minor soft band | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -12.48 mAMSL (?) |
| 14 | 22 | -12.48 | -20.48 | 8 | Old fractured limestone |
| **BN30** | OEC, PPK & Erasito (2001) | 2001 | Borehole and piezometer: salinity monitoring and water table survey | 0 | 1.5 | 1.63 | 0.13 | 1.5 | Rubble filled trench | **Holocene**: coral sediments  | Medium sand to gravel |
| 1.5 | 3 | 0.13 | -1.37 | 1.5 | Lightly cemented reef rubble |
| 3 | 5 | -1.37 | -3.37 | 2 | Lightly cemented soft and hard material |
| 5 | 9 | -3.37 | -7.37 | 4 | Firm limestone | Hard coral rock formation |
| 9 | 11 | -7.37 | -9.37 | 2 | Soft sand | Medium sand to gravel |
| 11 | 12.5 | -9.37 | -10.87 | 1.5 | Very hard limestone | Hard coral rock formation |
| 12.5 | 13.5 | -10.87 | -11.87 | 1 | Soft sand | Medium sand to gravel |
| 13.5 | 13.5 | -11.87 | -11.87 | 0 | Firm limestone | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -11.87 mAMSL (?) |
| 13.5 | 22 | -11.87 | -20.37 | 8.5 | Old fractured limestone |
| **BN31** | OEC, PPK & Erasito (2001) | 2001 | Piezometer: water table survey | 0 | 2.3 | 2.54 | 0.24 | 2.3 | No geological log description recorded |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| BN32 | Falkland, White & Turner (2004) | 2004 | Borehole and piezometer: salinity monitoring and water table survey, available | 0 | 0.4 | 1.69 | 1.29 | 0.4 | Soil: fine to coarse grained, medium dense, dense grey, Dark Grey, moist ( possible aircraft pavement) | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.4 | 1.6 | 1.29 | 0.09 | 1.2 | Gravelly sand/ Sandy gavel: fine to coarse grained, loose - medium dense, cream and white, saturated below 1m |
| 1.6 | 3.6 | 0.09 | -1.91 | 2 | Silty/ sandy gravel: fine to coarse grained, medium dense with some coral cobbles |
| 3.6 | 4.8 | -1.91 | -3.11 | 1.2 | Silt/ gravelly sand / sandy gravel: fine to coarse grained, medium dense with some coral cobbles |
| 4.8 | 5.2 | -3.11 | -3.51 | 0.4 | Silty/ sandy grave: fine to coarse grained, medium dense with some coral cobbles |
| 5.2 | 6.2 | -3.51 | -4.51 | 1 | Silty sand: fine to medium grained, medium dense, cream, slightly cemented with minor trace gravel |
| 6.2 | 8.5 | -4.51 | -6.81 | 2.3 | Silty sand: fine to medium grained, loose, cream with trace gravel |
| 8.5 | 10 | -6.81 | -8.31 | 1.5 | Silty sand: fine to medium grained loose, cream with trace gravel |
| 10 | 10.8 | -8.31 | -9.11 | 0.8 | Coral: slightly to highly fractured, cream with some sand filled solution cavities, low to medium strength | Hard coral rock formation |
| 10.8 | 11.5 | -9.11 | -9.81 | 0.7 | Sandy gravel/ gravelly sand: sand fine to coarse grained, loose medium dense, cream | Medium sand to gravel |
| 11.5 | 12 | -9.81 | -10.31 | 0.5 | Silty sandy: fine to medium grained, loose - medium dense, cream with minor fine grained gravel |
| 12 | 13.1 | -10.31 | -11.41 | 1.1 | Gravelly sand: fine to coarse grained, loose - medium dense , cream, slight increase in sand content below 12.8m |
| 13.1 | 13.6 | -11.41 | -11.91 | 0.5 | Silty sand: fine grained, loose to medium dense, cream and grey |
| 13.6 | 14.2 | -11.91 | -12.51 | 0.6 | Sandy gravel: fine to coarse grained, medium dense - dense , cream and grey |
| 14.2 | 14.2 | -12.51 | -12.51 | 0 | Limestone: moderately weathered, slightly fractured, cream and grey, moderate strength. Hard zone from 14.8 - 15.6m | **Pleistocene**: coral limestone | **Thurber discontinuity:**  -12.51 mAMSL (?) |
| 14.2 | 17 | -12.51 | -15.31 | 2.8 | Old fractured limestone |
| 17 | 17.4 | -15.31 | -15.71 | 0.4 | Limestone: highly fractured, cream and grey, sand filled fractures, low to medium strength |
| 17.4 | 20.3 | -15.71 | -18.61 | 2.9 | Limestone: moderately weathered, slightly fractured, cream and grey, sand lenses at 18.6 - 18.8m and 19.4 - 19.6m |
| 20.3 | 27.5 | -18.61 | -25.81 | 7.2 | Limestone: highly fractured, highly weathered, cream and grey, numerous sand filled cavities, low strength |
| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN33** | Falkland, White & Turner (2004) | 2004 | Borehole and piezometer: salinity monitoring and water table survey, available | 0 | 0.4 | 2.07 | 1.67 | 0.4 | Soil: fine to coarse grained, medium dense, dense grey, dry to moist ( possible fill to aircraft pavement) | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.4 | 0.7 | 1.67 | 1.37 | 0.3 | Sandy gravel: fine to coarse grained, dense, dark grey - black, dry, old runway pavement, fill |
| 0.7 | 1.1 | 1.37 | 0.97 | 0.4 | Gravelly silty sand: fill possible, fine to medium grained, medium dense - dense, grey, moist |
| 1.1 | 3.8 | 0.97 | -1.73 | 2.7 | Silty sandy gravel/ sandy silty gravel: fine to coarse grained, medium dense, cream and white, saturated below 1.3m |
| 3.8 | 5.9 | -1.73 | -3.83 | 2.1 | Silty sand: fine to medium grained, loose- medium dense, grey and cream with trace medium - coarse grained gravel at depth 4.1 - 4.2m and 4.6 - 4.8m |
| 5.9 | 9.5 | -3.83 | -7.43 | 3.6 | Silty gravelly sand: fine to coarse grained, medium dense - dense, cream and white ( slightly cemented) with increase in gravel content at depths 6.6 - 6.9m and 8.0 - 8.5m |
| 9.5 | 11.8 | -7.43 | -9.73 | 2.3 | Silty sand: fine to medium grained, loose, cream and white. Borehole caving and severe mud loss |
| 11.8 | 11.8 | -9.73 | -9.73 | 0 | Limestone: highly weathered, highly fractured, cream, low strength, highly to moderately weathered below 12.8m, sand filled cavity at depth 13.2 - 13.4m | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -9.73mAMSL |
| 11.8 | 13.9 | -9.73 | -11.83 | 2.1 |  | Old fractured limestone |
| 13.9 | 15.3 | -11.83 | -13.23 | 1.4 | Limestone: slightly weathered, slightly fractured, white, crystalline, high strength |
| 15.3 | 27.5 | -13.23 | -25.43 | 12.2 | Limestone: moderately weathered, moderately fractured, cream and white strength |

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| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN34** | Falkland, White & Turner (2004) | 2004 | Borehole and piezometer: salinity monitoring and water table survey, available | 0 | 0.3 | 1.63 | 1.33 | 0.3 | Soil: silty sand, fine to medium grained, loose, dark grey and cream, dry to moist with some coral gravel | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.3 | 0.6 | 1.33 | 1.03 | 0.3 | Sandy gravel (hardpan): fine to coarse grained, dense - very dense, cream, dry (hardpan) |
| 0.6 | 1.6 | 1.03 | 0.03 | 1 | Silty gravelly sand: fine coarse grained, medium dense, cream, saturated below 1.0 |
| 1.6 | 3.1 | 0.03 | -1.47 | 1.5 | Sandy gravel: fine to coarse grained, dense - very dense, cream, dry (hardpan) |
| 3.1 | 4.1 | -1.47 | -2.47 | 1 | Sand gravel: fine to coarse grained, dense - very dense, cream, cemented |
| 4.1 | 6.3 | -2.47 | -4.67 | 2.2 | Sandy gravel/ gravelly sand: fine to coarse grained, dense , cream and white |
| 6.3 | 6.7 | -4.67 | -5.07 | 0.4 | Silty sand; fine to medium grained, loose - medium dense, cream and white |
| 6.7 | 8.2 | -5.07 | -6.57 | 1.5 | Sandy gravel: fine to medium grained, very dense, cream, some coral cobbles (slightly cemented) |
| 8.2 | 12.1 | -6.57 | -10.47 | 3.9 | Silty sand: fine to medium grained, loose, cream and white |
| 12.1 | 12.1 | -10.47 | -10.47 | 0 | Limestone: highly weathered, highly fractured, cream and white, low strength | **Pleistocene**: coral limestone | **Thurber discontinuity:** unconformity depth -10.47 mAMSL |
| 12.1 | 14.4 | -10.47 | -12.77 | 2.3 | Old fractured limestone |
| 14.4 | 16.8 | -12.77 | -15.17 | 2.4 | Limestone: slightly to moderately weathered, moderately to highly fractured, cream and white, medium strength |
| 16.8 | 17.4 | -15.17 | -15.77 | 0.6 | Limestone: moderately to highly weathered, moderately fractured, cream and white, medium strength |
| 17.4 | 25 | -15.77 | -23.37 | 7.6 | Limestone: moderately weathered, moderately fractured, cream and white, some sand filled lenses |
| **Names** | **References** | **Date of drilling** | **Comments and status** | **From (mbgl)**  | **To (mbgl)** | **From (mAMSL)** | **To (mAMSL)** | **Thickness (m)** | **Original Lithology Description** | **Lithology Keyword (Geological layers)**  | **Lithology Keyword (Strategic Geological layers identification)**  |
| **BN35** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.2 | 2.66 | 2.46 | 0.2 |  Grey filled materials | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.2 | 0.74 | 2.46 | 1.92 | 0.54 |  Soil, black to grey sand and gravel, roots and organic matter |
| 0.74 | 1.76 | 1.92 | 0.90 | 1.02 |  Gravelly sand, fine to medium, white (cm to dm) |
| 1.76 | 3.67 | 0.90 | -1.01 | 1.91 | Sandy gravel, white (cm to dm), coral cobbles |
| **BN36** | SPC (2014) | 2013 | Piezometer: water table survey, available | 0 | 0.3 | 2.30 | 2.00 | 0.3 |  Soil, black to grey sand, roots and organic matter | **Holocene**: coral sediments  | Medium sand to gravel |
| 0.3 | 2 | 2.00 | 0.30 | 1.7 |  Gravelly sand, medium, white, very dense to dense |
| 2 | 3.5 | 0.30 | -1.20 | 1.5 |  Gravelly sand, with cobbles fresh coral , sandstone boulders with cobbles, lightly to slightly cemented |
| 3.5 | 4 | -1.20 | -1.70 | 0.5 | Gravelly sand, with sandstone boulders with green coral boulders, slightly cemented |
| (mAMSL) meter Above Mean Sea Level(mbgl) meter below ground level |