COX PENINSULA

Water Supply Investigations

Stage 2 - 2003/04

REPORT No 9/2004D

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June 2004
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1. Executive Summary

A groundwater investigation project was undertaken by the Natural Systems Division in the Charles Point area of the Cox Peninsula between October and November, 2003. This work was commissioned by the PowerWater Corporation to provide water supply infrastructure and address issues in relation to securing a bore extraction licence. Successful outcomes have been delivered in accordance with the scope of works outlined below.

(i) Conduct further investigation of the aquifer. Additional work was required to fill data gaps identified in a previous investigation documented by Natural Systems Division entitled *Preliminary Assessment of the Water Resources on the Cox Peninsula - Report 13/2003D* (Yin Foo et al, 2003). The current assessment of hydrogeological data provided by this phase of work essentially supports the model of the aquifer as proposed in the previous report.

(ii) Locate and construct additional monitoring bores. A network of strategic monitoring bores are located to provide information in areas identified as groundwater dependent ecosystems. Additionally, 10 monitoring bores are established to provide data for a future review of resource and borefield performance under a utilisation scheme.

(iii) Construct and test production bores. Three production bores were located, drilled and constructed in an area deemed by PowerWater Corporation as acceptable for their infrastructure development. These bores have the capacity to produce 5L/s.
2. Introduction

In 2002, a groundwater investigations project located and evaluated a groundwater resource in the north-western sector of the Cox Peninsula. A *Preliminary Assessment of the Water Resources on the Cox Peninsula - Report 13/2003D* (Yin Foo et al, 2003) provided indication that it would represent a viable and adequate water supply to the communities at Mandorah and Wagait. However, a more complete understanding of the resource, its behaviour and the address of issues associated with the monitoring of environmentally sensitive areas identified in the above report, were deemed prerequisite to the granting of a bore extraction licence to the PowerWater Corporation (PWC). The PWC subsequently commissioned the Natural Systems Division to undertake work to furnish the additional information required and to concurrently develop a production borefield. The field programme, consisting of investigative and production bore drilling, bore testing, stratigraphic and geophysical logging and the establishment of a monitoring network was undertaken between September and November, 2003.

Groundwater investigations of 2002 were primarily conducted in the study area indicated in Figure 1 to identify and evaluate a groundwater resource. This report presents the further understanding of groundwater resources in the study area based on the investigative work in 2003. This programme has also sought to develop the resource as a water supply to the communities of Mandorah and Wagait. The borefield thus identified is located up to 10kms from the water storage facility at Imaluk Springs west of the Wagait community.
3. **Results and Summary of 2003 Groundwater Investigation**

The locations of bores drilled in the 2003 investigation are shown on Figure 2 of this report. Other data obtained during the recent investigation referred to in this report are presented in *Technical Data Report 10/2004D (Humphreys et al, 2004)*. Such data includes lithological and geophysical logs, bore test and construction details, chemical analyses of water and water level monitoring data.

### 3.1 Evaluation of Data

The 2003 investigation sought to develop better understanding in two main areas - the possible impact of borefield pumping on the groundwater dependent ecosystems identified in Report 13/2003D as S1, S2 and W-W (refer Figure 3) and the extent and nature of the aquifer in its western region towards Charles Point.

Bores were drilled at strategic locations with respect to the groundwater dependent ecosystems to establish the existence, and therefore continuity, of the sandstone aquifer on the defined fringes of the region (refer Figure 3). Strategic water level monitoring points were installed to provide better definition of aquifer system behaviour in these areas and data for the detection and assessment of borefield pumping impact.

Drilling was also undertaken to the west of the production borefield area (refer Figure 2). The four investigation bores drilled confirmed that the aquifer is laterally extensive beneath the western end of the peninsula and that it has a uniform thickness of approximately 13m across the region. The information obtained also substantiated the gentle westerly dipping trend of the aquifer as indicated on Cross-section A-A (refer Figure 2.4, Report 13/2003D). The sandstone, however, becomes much coarser and less clayey towards the west indicating permeability increase. Only minor clay was evidenced in the most westerly bore (RN33739). The water quality remains satisfactory for human consumption across the defined extent of the aquifer with total dissolved solids generally less than 50mg/L. Tables 7.1 and 7.2 (*Humphreys et al, 2004*) updates water quality data for the study area.

The evidence of an unweathered horizon below 20m in bores west of RN33901 suggests that the aquifer beneath this area is characteristically confined rather than semi-confined as previously reported. Furthermore, continuous water levels monitored from bores within this region exhibit a diurnal response, and a consistent rise of approximately 4m as compared to bores outside this area which respond variably depending on the local discharge regimes. This information suggests the aquifer is confined. However, recognition of this condition does not alter the previous estimate of sustainable yield. The initial estimate in Report13/2003D was conservative in
Figure 2: Bore Locations

- **Pre 2002 Investigation Bore Sites**
- **Post 2002 Investigation Bore Sites Backfilled**
- **2002-2003 Bores Drilled and Constructed**
- **Production Bore**
- **Cadastral Boundary**
- **Road**
- **Drainage**
- **Mangrove**
- **Cox Peninsula Community Government Council Boundary**

**Legend:**
- Red Circle: Pre 2002 Bore Sites
- Green Circle: Post 2002 Bore Sites Backfilled
- Blue Circle: 2002-2003 Bore Drilled and Constructed

**Notable Locations:**
- Charles Point
- Tapa Bay
- Point Margaret
- Ida Bay
- West Point
- Picnic Point
- Mandorah

**Map Features:**
- Timor Sea
- Beagle Gulf
- Cox Peninsula
- Darwin

**Scale:**
- 1:25,000

**Source:**
- Northern Territory Government
- Department of Infrastructure, Planning and Environment
- Conservation and Natural Resources Group

**Map Reference:**
- Cox Peninsula Water Resources Assessment Bore Locations
- Design File: Cox-Pen-Bore-Loc_25m
- Plot File: Cox-Pen_Bore-Locations
assuming that recharge only occurred over the unconfined zone to the east (refer Figure 3).

Previous reporting also postulated that submarine or coastal discharge regimes could possibly occur. This is confirmed by the water level contours on Figures 6.7 and 6.8 of the Technical Data Report (Humphreys et al, 2004) which indicate local depressions on the north and south coast.

Pumping tests within the production borefield were primarily to determine bore performance characteristics. These gave indication of slight permeability variations in the sandstone aquifer. This is attributed to local enhancements in permeability, such as through secondary porosity. A summary of aquifer parameters is provided in Table 4 of the Technical Data Report (Humphreys et al, 2004).

3.2 Assessment of Groundwater Resources

The further information provided by the recent investigation does not conflict with the calculation of sustainable yield of the aquifer as presented in Appendix D of Report 13/2003D. Water level monitoring data current to February, 2004 supports the assumption of an annual rise of approximately 7m in determining the monthly “Change in Groundwater Storage” as indicated in Table D2 of the above report. Therefore, reference is made to Appendix D of Report 13/2003D for sustainable yield and water balance calculations, which are summarised in Table 1 below.

**TABLE 1 Water Balance Summary**

<table>
<thead>
<tr>
<th>Component</th>
<th>Estimated Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential recharge</td>
<td>2000 – 7000 ML/y</td>
</tr>
<tr>
<td>Calculated recharge</td>
<td>2800 – 7000 ML/y</td>
</tr>
<tr>
<td>Storage end of Dry</td>
<td>8000 – 30000 ML</td>
</tr>
<tr>
<td>Groundwater Recharge (considered as groundwater discharge) calculated from Water Balance</td>
<td>3258 ML/y</td>
</tr>
<tr>
<td>Surface runoff</td>
<td>14120 ML/y</td>
</tr>
<tr>
<td>Evapotranspiration</td>
<td>18280 ML/y</td>
</tr>
<tr>
<td>Rainfall</td>
<td>32400 ML/y</td>
</tr>
<tr>
<td>Use by Groundwater Dependent Ecosystems</td>
<td>2400 ML/y</td>
</tr>
</tbody>
</table>
4. Water Demand and Operational Strategy

4.1 Water Demand

Background to the current water supply regime is provided in Report 13/2003D. It services a permanent population of approximately 400, representing users from the communities of Wagait and Mandorah. The capacity of the area in terms of population is approximately 1500 based on full occupation of the yet to be developed lots at Wagait.

The water storage infrastructure comprises two 1ML tanks provided and managed by PowerWater Corporation at the Imaluk Springs facility. There is neither reticulation of supply nor short term plans to provide such infrastructure. Individuals are required to tanker their own supplies from the facility as required. Continuation of this regime is proposed, however, sourcing the supply from the new borefield rather than the spring.

The current limit on water supply is about 0.4kL per household per day which would generally be limited by available household storage in any case. However, in calculating the average day demand, and considering that household capacity to use water is largely restricted by the need to fetch water, an estimate of water demand is made herein. If an average day demand of 0.4kL/c/d is assumed, the average day demand would be 160kL/day from the borefield based on the current permanent population of 400. The maximum day demand would be 240kL/day.

The current and project water demand is summarised in Table 2.

**TABLE 2 Current and Projected Water Demand**

<table>
<thead>
<tr>
<th>Population</th>
<th>Average day demand (kL/day)* based on 0.4kL/c/day</th>
<th>Maximum day demand (kL/day)* based on 0.6kL/c/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 (current)</td>
<td>160 (1.8)</td>
<td>240 (2.8)</td>
</tr>
<tr>
<td>1500 (projected)</td>
<td>600 (6.9)</td>
<td>900 (10.4)</td>
</tr>
</tbody>
</table>

* equivalent rate in L/s in brackets

4.2 Production Bore Recommendations

All production bore construction details and recommendations are included in the bore completion reports in Appendix A. The relevant performance curves are included as attachments. These curves assume a seasonal water level decline of 7m. The map on Figure 2
indicates their location. The recommended pumping rates and settings assume a continuous pumping regime and are summarised in Table 3 below.

Water analyses for general chemical parameters and specific metals and radionuclides for the production bores are included in Tables A1 and A2. The water samples were obtained by pumping in accordance with procedures specified by PowerWater Corporation (2003). The water quality is suitable for human consumption. However, it is acidic with a pH of approximately 5 at the borehead. It is therefore recommended that inert material is used in the infrastructure and the water is treated to raise the pH at the storage tank.

### TABLE 3  Production Bore Recommendations

<table>
<thead>
<tr>
<th>Bore RN</th>
<th>Recommended Pumping Rate (L/s)</th>
<th>Recommended Pump Setting (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN33731</td>
<td>2.3</td>
<td>21</td>
</tr>
<tr>
<td>RN33902</td>
<td>1.5</td>
<td>17</td>
</tr>
<tr>
<td>RN33733</td>
<td>1.2</td>
<td>19.5</td>
</tr>
</tbody>
</table>

### 4.3 Borefield Operational Strategy

A borefield operational strategy to meet various demands is provided in Table 4 below. It should be noted that all new bores are required to be equipped from the outset. Borefield upgrading should be considered when the demand rate reaches 2.7L/s as there is a lack of standby capacity once all bores are required for continuous duty.

### TABLE 4  Borefield Operational Strategy

<table>
<thead>
<tr>
<th>Required supply rate</th>
<th>Regime of bores required in operation</th>
<th>Required as Standby Bores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8 L/s (current)</td>
<td>RN33731</td>
<td>RN33902, RN33733</td>
</tr>
<tr>
<td>2.7 L/s</td>
<td>RN33902, RN33733</td>
<td>RN33731</td>
</tr>
<tr>
<td>5 L/s</td>
<td>RN33902, RN33731, RN33733</td>
<td>No standby bores available</td>
</tr>
</tbody>
</table>
5. Monitoring Requirements

The prescribed ongoing monitoring requirement of the bore extraction licence can only be pre-empted at this stage. However, the primary concerns of the Controller of Water Resources in this area are known to be sustainability of the resource, the effect of abstraction and that groundwater dependent ecosystems are not adversely affected. Therefore, collection of the following data is expected to be essential in the fulfilment of the conditions of licensing.

Production should be metered from each production bore. This data should be collected at least monthly. In the proximity of each bore, a water level monitoring bore exists. Data from the monitoring bore will enable the performance of the nearby production bore to be assessed.

The existing water level monitoring network has been established to provide data both centrally within the borefield area and on a regional basis. Such monitoring data will serve to provide a basis for a future reappraisal of the resource.

Specific monitoring sites are also located near each of three groundwater dependent ecosystems - S1, S2 and W-W (refer Figure 3). The drilling of these sites established them within the path of a groundwater discharge regime and in connection with the particular nearby groundwater dependent ecosystem. Data obtained through monitoring these sites is intended to demonstrate non-impact of borefield pumping.

Table 5 below presents a list of bores in which water levels are recommended to be measured at least monthly. Furthermore, continuous water level loggers are recommended to be installed at the four sites indicated in the table below.

<table>
<thead>
<tr>
<th>RN 33565*</th>
<th>RN 33569</th>
<th>RN 33729</th>
<th>RN 33730</th>
<th>RN 33732</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN 32734</td>
<td>RN 33736*</td>
<td>RN 33737*</td>
<td>RN 33738</td>
<td>RN 33739*</td>
</tr>
<tr>
<td>RN 33900</td>
<td>RN 33901</td>
<td>RN 33339</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*recommended for continuous water level logger installation
6. Water Supply Development Potential

A water supply borefield may potentially be developed to the allocated limit, notionally said to be 20% of recharge (refer Section 3.2) equating to about 600ML/y. However, the capture of this volume is highly dependent on the borefield configuration, currently limited to an easement of 100m width running parallel to the Charles Point Road and up to the gate at the radio transmitter site at Charles Point.

There is potential to locate additional production bores between the existing new bores on the Charles Point Road. At the pumping rates proposed from the new bores, interference effects will not be of the magnitude initially anticipated. Yields of 1 to 2 L/s can be expected from additional bores appropriately sited between RN33731 and RN33902.

A program of monitoring from the number of regional bores is recommended (refer Section 5). Such data will be necessary to optimise the placement of new bores when further upgrading of this borefield is undertaken. As a regulatory requirement, such assessment will provide the basis for revision of the sustainable yield of the resource and satisfy licence conditions in regards to non-impact of the groundwater dependent ecosystems.

Expansion of the borefield further west may be possible and individual bore yields of up to 10L/s could be expected due to increased submergence characteristics and greater aquifer permeability. Test bore RN33738 was constructed in this area to demonstrate this. However, the confined nature of the aquifer presents a number of factors to restrict its capacity as a water source. The aquifer in this condition has a limited recharge potential as compared to the unconfined part of the aquifer further east. A borefield in this area would result in a regionalised drawdown regime and environmentally sensitive areas possibly impacted would need to be considered. Additionally, the impact on the existing borefield would need to be assessed. Such an assessment of this scenario is best performed using a numerical model.

Current data indicates there are zones of coastal discharge. These areas would present a potential avenue for seawater intrusion, which would also need to be considered.
7. Conclusions

The 2003 investigation of the groundwater resources in the north-western area of Cox Peninsula has provided a secure water supply for the Wagait and Mandorah communities. This work has affirmed the understanding of the aquifer system and established a network of bores from which the performance of the borefield may be monitored. Some of these monitoring bores have been installed to confirm non-impact to groundwater dependent ecosystems.

Three production bores were constructed and are capable of delivering a peak supply of 5L/s.

Investigative drilling on a regional scale has demonstrated the resource is extensive towards the west and underlies the entire Charles Point area. The sandstone aquifer increases in permeability towards this area, however, its development capacity as a future water supply may be limited by potential recharge.
8. **Recommendations**

(i) The production bores should be equipped in accordance with the pumping rates and settings in Table 3.

(ii) Bore production should be metered and recorded monthly.

(iii) Water levels should be measured monthly from the bores listed in Table 5.

(iv) Continuous water level recorders are recommended to be installed on monitoring bores RN33565, RN33736, RN33737, RN33739.

(v) The water should be treated to raise the pH.
9. **References**


APPENDIX A

Bore Completion Reports –
RN 33731, RN 33733 and RN 33902
NATURAL SYSTEMS DIVISION
TEST REPORT – RN 33731

Bore Location: COX PENINSULA
Map: DARWIN 1:100,000 Sheet: 5073
Grid Reference: AGD 66 52L 0679331 - 8625083

Client: PowerWater Corporation
Purpose: Community Water Supply

***************************************************************
RECOMMENDATIONS: Pumping Rate: 2.3 L/s
For alternative pumping rates or settings contact:
Natural Systems Goyder Centre
25 Chung Wah Tce.
Palmerston NT 0831

General recommendations are on reverse side.

In all correspondence please quote RN 33731
***************************************************************

Bore Data:
Finished depth: 28.0 m Completion date: 13.9.03
Standing Water Level: 10.11 m on 10.11.03
Construction Details:
Test Date: 11.11.03
Test Rate: 2 L/s
Test Duration: 24 hours

Interval                   Description
0.0 - 22.0 m               161 mm ID stainless steel casing
22.0 - 26.0 m              152 mm ID stainless steel screens, 2 mm aperture
26.0 - 28.0 m              161 mm ID stainless steel casing

Notes: 1. Top of casing when tested was 0.37 m above ground.
2. All depths are measured from natural ground level unless stated otherwise.
3. Test rates do not necessarily indicate a sustainable yield for production pumping.

WARNING: MINIMUM INTERNAL BORE DIAMETER IS 152 mm
MINIMUM INTERNAL BORE DIAMETER TO RECOMMENDED PUMP SETTING IS 161 mm

***************************************************************
COMMENTS:
1. The above recommendations are based on a constant rate test at 2 L/s for 24 hours and
assume that hydrological conditions remain constant.
2. It is recommended that provision to monitor water levels and obtain water samples while
pumping should be incorporated when this bore is equipped.
3. This bore has only been pumped to a maximum rate of 2 L/s during testing
4. The attached bore performance curve (Figure A1) is for the recommended rate of 2.3 L/s

***************************************************************

Prepared by: Dennis Low                 Checked by: D. Yin Foo
24.11.03                               3.3.04
**Assumptions**
- End of wet season SWL = 3m bGL
- Seasonal water level decline = 7m over 400000 minutes (9 months)
- The pumping rate is continuous at 2.3 L/s (as recommended)

**Figure A1**
Available drawdown at the recommended pump setting of 21m

Bore Performance Curve for RN 33731
NATURAL SYSTEMS DIVISION
TEST REPORT – RN 33733

Bore Location: COX PENINSULA
Map: DARWIN 1:100,000 Sheet: 5073
Grid Reference: AGD 66 52L 0680254 - 8624721

Client: PowerWater Corporation
Purpose: Community Water Supply

***************************************************************************
RECOMMENDATIONS: Pumping Rate: 1.2 L/s
For alternative pumping rates or settings contact: Natural Systems Goyder Centre
General recommendations are on reverse side.
In all correspondence please quote RN 33733
25 Chung Wah Tee.
Palmerston NT 0831
***************************************************************************

Bore Data:
Finished depth: 28.0 m Completion date: 17.9.03
Standing Water Level: 11.36 m on 6.11.03
Test Date:          7.11.03
Test Rate:           1.5 L/s
Test Duration: 24 hours

<table>
<thead>
<tr>
<th>Interval</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 - 20.0 m</td>
<td>161 mm ID stainless steel casing</td>
</tr>
<tr>
<td>20.0 - 26.0 m</td>
<td>152 mm ID stainless steel screens, 2 mm aperture</td>
</tr>
<tr>
<td>26.0 - 28.0 m</td>
<td>161 mm ID stainless steel casing</td>
</tr>
</tbody>
</table>

Notes:
1. Top of casing when tested was 0.50 m above ground.
2. All depths are measured from natural ground level unless stated otherwise.
3. Test rates do not necessarily indicate a sustainable yield for production pumping.

WARNING:
MINIMUM INTERNAL BORE DIAMETER IS 152 mm
MINIMUM INTERNAL BORE DIAMETER TO RECOMMENDED PUMP SETTING IS 161 mm

***************************************************************************
COMMENTS:
1. The above recommendations are based on a constant rate test at 1.5 L/s for 24 hours and assume that hydrological conditions remain constant.
2. It is recommended that provision to monitor water levels and obtain water samples while pumping should be incorporated when this bore is equipped.
3. The attached bore performance curve (Figure A2) is for the recommended rate of 1.2 L/s

***************************************************************************

Prepared by: Dennis Low
24.11.03
Checked by: D. Yin Foo
3.3.04
Assumptions
- End of wet season SWL = 5m bGL
- Seasonal water level decline = 7m over 400 000 minutes (9 months)
- The pumping rate is continuous at 1.2 L/s (as recommended)

Available drawdown at the recommended pump setting of 19.5m

Bore Performance Curve for RN 33733
NATURAL SYSTEMS DIVISION
TEST REPORT – RN 33902

Bore Location: COX PENINSULA
Map: DARWIN 1:100,000 Sheet: 5073
Grid Reference: AGD 66 52L 0682060 - 8624270

Purpose: Community Water Supply

***************************************************************************
RECOMMENDATIONS: Pumping Rate: 1.5 L/s
Pump Setting: 17.0 m
For alternative pumping rates or settings contact: Natural Systems Goyder Centre
25 Chung Wah Tee.
Palmerston NT 0831
General recommendations are on reverse side.
In all correspondence please quote RN 33902
***************************************************************************

Bore Data:
Finished depth: 29.10 m Completion date: 1.10.03
Standing Water Level: 9.30 m on 3.11.03
Test Date: 4.11.03
Test Rate: 1.5 L/s
Test Duration: 24 hours

<table>
<thead>
<tr>
<th>Interval</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 - 18.0 m</td>
<td>161 mm ID stainless steel casing</td>
</tr>
<tr>
<td>18.0 - 20.0 m</td>
<td>152 mm ID stainless steel screens, 2 mm aperture</td>
</tr>
<tr>
<td>20.0 - 21.0 m</td>
<td>161 mm ID stainless steel casing</td>
</tr>
<tr>
<td>21.0 - 23.0 m</td>
<td>152 mm ID stainless steel screens, 2 mm aperture</td>
</tr>
<tr>
<td>23.0 - 29.1 m</td>
<td>161 mm ID stainless steel casing</td>
</tr>
</tbody>
</table>

Notes:
1. Top of casing when tested was 0.65 m above ground.
2. All depths are measured from natural ground level unless stated otherwise.
3. Test rates do not necessarily indicate a sustainable yield for production pumping.

WARNING:
MINIMUM INTERNAL BORE DIAMETER IS 152 mm
MINIMUM INTERNAL BORE DIAMETER TO RECOMMENDED PUMP SETTING IS 152 mm

***************************************************************************
COMMENTS:
1. The above recommendations are based on a constant rate test at 1.5 L/s for 24 hours and assume that hydrological conditions remain constant.

2. It is recommended that provision to monitor water levels and obtain water samples while pumping should be incorporated when this bore is equipped.

3. The attached bore performance curve (Figure A3) is for the recommended rate of 1.5 L/s

***************************************************************************
WATER ANALYSIS:
Refer Tables A1 & A2 in Natural Systems Division Report 9/2004D.

Prepared by: Dennis Low
24.11.03

Checked by: D. Yin Foo
3.3.04
Assumptions
- End of wet season SWL = 2m bGL
- Seasonal water level decline = 7m over 400,000 minutes (9 months)
- The pumping rate is continuous at 1.5 L/s (as recommended)

Figure A3

Bore Performance Curve for RN 33902
### Table A1  Water Quality Data – General Chemical and Metals

<table>
<thead>
<tr>
<th>Parameter</th>
<th>unit</th>
<th>RN 33731</th>
<th>RN 33733</th>
<th>RN 33902</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td></td>
<td>5.2</td>
<td>5.3</td>
<td>5.1</td>
</tr>
<tr>
<td>EC</td>
<td>µS/cm</td>
<td>39</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td>Alkalinity</td>
<td>mg/L</td>
<td>6</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>CO$_3$</td>
<td>mg/L</td>
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<td>0</td>
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</tr>
<tr>
<td>HCO$_3$</td>
<td>mg/L</td>
<td>7</td>
<td>19</td>
<td>5</td>
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<tr>
<td>OH</td>
<td>mg/L</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hardness</td>
<td>mg/L</td>
<td>3</td>
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<td>2</td>
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<tr>
<td>NH$_3$ as N</td>
<td>mg/L</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>mg/L</td>
<td>0.1</td>
<td>0.1</td>
<td>&lt;0.1</td>
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<td>Turbidity</td>
<td>NTU</td>
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<tr>
<td>TSS</td>
<td>mg/L</td>
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<tr>
<td>TDS</td>
<td>mg/L</td>
<td>33</td>
<td>48</td>
<td>23</td>
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<td>NO$_2$ as N</td>
<td>mg/L</td>
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<tr>
<td>Cl</td>
<td>mg/L</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>NO$_3$ as N</td>
<td>mg/L</td>
<td>&lt;1</td>
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All metals analyses as total
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<th>Bore RN</th>
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<td>RN33733</td>
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<td>RN33902</td>
<td>0.0070 +/- 0.0044</td>
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