

NOKWEJA / CARISBROOKE COMMUNITY WATER SUPPLY PROJECT

PROJECT SUMMARY

Compiled by

Craig Leat, Partners in Development (Pty) Ltd



Partners in Development (Pty) Ltd
P O Box 11431
Dorpspruit, 3206
Tel: (033) 342 3012
Fax: (033) 342 0636
Email: contact@pid.co.za



The Sisonke District Municipality
Private Bag X501
Ixopo, 3276
Tel: (039) 834 8700
Fax: (039) 834 1701

July 2006

1. PROJECT BACKGROUND

The Nokweja Community Water Supply Scheme (CWSS) is situated 14km from Ixopo along the Umzimkulu road. The project falls within the boundaries of the Sisonke District Municipality. There are two distinct areas separated by agricultural land. The main Nokweja area has the Umzimkulu River as the southern and western boundary, the Ncalu River as the eastern boundary and agricultural land as the northern boundary. The second area, Carisbrooke, lies 7km to the north and is completely surrounded by agricultural land.

A business plan for the project was submitted in February 2002 and the business plan was approved in April of the same year. The planned scope of work was to allow for the construction of water reticulation schemes to the communities of Nokweja and Carisbrooke. The construction contract was awarded in November 2004 and the contract value is R 12 888 128.75 including VAT, 8% contingencies and 5% escalation.

The population of the main project area is 11 326 and Carisbrooke has 756 inhabitants. Allowing for water losses the demands for Nokweja and Carisbrooke are 816 kl/day and 54 kl/day respectively. In Carisbrooke there are on average 6.4 homes per tap and in Nokweja there are on average 6.2 homes per tap.

The scope of work for the project entails the following:

1. 260 public taps on the main site and 17 taps in Carisbrooke.
2. 4 bulk reservoirs in sizes 900kl, 300kl, 120kl, 40kl (Carisbrooke)
3. 19 break pressure tanks in sizes 5kl to 70kl
4. One borehole will be equipped in Webbs Town. This is for construction only as there is insufficient yield to supply the project's needs.
5. One abstraction well on the Umzimkulu river.
6. One Water treatment works near the Umzimkulu river including main pump station.
7. One booster pump station at St Alois.
8. Carisbrooke uses a small weir in a stream and the water is gravity fed to the reservoir.
9. In Carisbrooke there is no filtration; only chlorination.
10. The pipe lengths on the main site are:
 - a. 8350m of rising mains. The biggest pipe is a 160mm.
 - b. 5760m of bulk reticulation.
 - c. 72000m of secondary reticulation.
11. The total pipe length in Carisbrooke is 5000m.
12. Four water offices (including one in Carisbrooke)

2. LOCATION OF PRODUCTION BOREHOLES - GEOHYDROLOGICAL INVESTIGATION

The Geomeasure Group were appointed to undertake the geohydrological investigation at Nokweja. An initial groundwater investigation was conducted by Geomeasure in 1998, where a total of 14 boreholes were drilled. Only 8 hour calibration tests were carried out on these boreholes at the time and handpumps were installed on 9 boreholes. A further two boreholes were drilled in 2002 by AquAmanzi and one was also equipped with a handpump.

The Geomeasure Group began their study by carrying out a detailed hydrocensus, assisted by the Nokweja PSC, to ensure that all known information regarding the existing boreholes was compiled. The boreholes were categorised according to their reported blow yields and/or calibration yields, and prioritised accordingly for testing. In addition, 7 new boreholes were drilled by SA Drilling. Of these, only 4 were successful and were added to the list of boreholes to be tested.

In total, 17 boreholes were subjected to either calibration or lineshaft tests depending on their reported blow yields. Unfortunately none of the boreholes was able to provide the demand required by this project.

3. LOCATION OF ALTERNATIVE WATER SOURCE FOR THE NOKWEJA CWSS

Since the groundwater investigation showed that the boreholes are unable to supply sufficient water it was necessary to explore the surface water options. A site investigation was carried out to identify and measure the various surface water sources in April 2003. Streams throughout Nokweja were visited, as well as the uMzimkhulu River. The Ncalu River to the East of Plain Hill was considered to be the only viable alternative to the uMzimkhulu River.

It was necessary to consider the costs of establishing an abstraction works and the costs of operating and maintaining the abstraction works when deciding on the best source of water. When all factors were considered it was decided that the uMzimkhulu River was the best source.

4. REVISED SCOPE OF WORKS FOR NOKWEJA CWSS

During the detailed design phase of the project the consultants were requested by Sisonke District Municipality to increase the capacity of the bulk supply infrastructure to enable the project to be extended to supply the communities of eMazabekweni and eBovini lying to the east. The rising mains were increased from a 140 mm to a 160 mm pipeline to provide for this planned extension.

5. CHANGE IN IMPLEMENTATION AGENT

During the earlier phases of this project, the Mvula Trust was employed by the Sisonke District Municipality as their implementing agent. Sisonke has in the interim acquired IA status and now performs the IA function for this project.

6. TIME FRAME

The time frame for the project is shown in the table below.

TIME FRAME FOR NOKWEJA CWSS

Milestone	Date
B.P. Addendum Submission	30 June 2004
B.P. Addendum Approved	31 August 2004
Design Completed	30 September 2004
Tender Document Completed	30 September 2004
Tender Advertisement in Press	07 October 2004
Site Inspection	14 October 2004
Closing of Tenders	04 November 2004
Tender Adjudication	12 November 2004
Appointment of Contractor	26 November 2004
Start of Construction	10 December 2004
End of Construction	30 November 2006
Transfer to WSA (upon commissioning)	30 November 2006
O&M Support Period Ends	30 November 2007

7. PROGRESS TO DATE

As at mid July 2006, approximately 85% of the construction budget has been expended. All the pipelines and reservoirs are practically complete. What remains is to complete the offices, tap stands, abstraction and treatment works.