APPENDIX H:

ENGINEERING REPORTS:

BERGZICHT ESTATE DEVELOPMENT
OF ERF 7562, ROBERTSON

BULK WATER & SEWER SERVICES
REPORT AND MAPS
COMMUNITY ENGINEERING SERVICES (CES)
November 2006 (4 pgs)
Figure H1: Possible route (green line) for the proposed 11kV OH Line from Main Substation at Muiskraalskop (pers com. J. Barnard, DKE Engineers).
CONFIRMATION OF ASSURANCE OF WATER RESOURCES – ERF 3 ROBERTSON

Your enquiry /BAR/erf 3/ Robertson, of 06/02/2007 refers.

It is hereby confirmed that bulk water/raw water resources will be adequate for the proposed extension.

Please find hereby attached the report from CES Engineering Services, who did the Water Master plan for council.

Yours faithfully,

NJ Koëgelenberg
HEAD CIVIL ENGINEERING SERVICES
28 November 2006

Nortje & De Villiers
Bergsiglaan 1
P.O. Box 2685
Paarl
7620

Attention: Mr Francois Nortje

Dear Sir

DEVELOPMENT OF ERF 3, ROBERTSON BULK WATER SERVICES

Your request regarding comments on the bulk water to the proposed development (Erf 3) refers.

This document should inter alia be read in conjunction with the Robertson Water Master Plan (performed for the Breede River Winelands Municipality) dated January 2006.

A larger area, (Future area R7), which includes the lower lying area of the proposed development was conceptually taken into consideration for the recently completed master plan for the water network.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

This development area should be accommodated in the existing Reservoir 2 zone as shown on Figure 1.

1.2 Water demand

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) for development (lower lying area of the proposed development) of 62 kT/d.

For this re-analysis, the AADD end fire flows for the proposed development was calculated as follows:

- 136 Residential units @ 1.0 kT/d/unit = 136 kT/d
- Fire flow criteria (Low risk) = 15 kT/d @ 7 m

Erf 7562 (Portion of Erf 3) Robertson BAR E12/2/3/1–B1/11–0346/07 Appendix H: 1 / 6
1.3 Present situation

Accommodation of the development in the present system will require upgrading of the existing system to comply with the pressure and fire flow criteria as set out in the master plan.

1.4 Implementation of the master plan

Network upgrade

- Item BRRW 2.1: 880 m x 200 mm Ø supply pipeline
  - Cost: R 525,280*

- Item BRRW 2.2: 150 m x 110 mm Ø network link
  - Cost: R 66,080*

- Item 1: 410 m x 160 mm Ø supply pipeline
  - Cost: R 209,440*

- Item 2**: New booster pump station
  - Cost: R 40,000*

Total: R 840,800*

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2006 Rand Value. This is a rough estimate which does not include major unforeseen costs).

(** The developer of Erf 3 will be liable for the implementation of an internal booster pump station to supply the higher lying erven of the development)

Take note that the route of the proposed pipeline is schematically shown on Figure 1, but has to be finalised subsequent to a detail pipeline route investigation.

Distribution zones

The distribution zones must be rezoned according to the master plan to improve pressures in the zones and to ensure that the storage capacities in the upper zones are optimised for the future demands.

2. INCREMENTAL COSTS TO THE DEVELOPER

The incremental cost of the proposed development on the relevant master plan items were calculated as follows:

- Item BRRW2.1: 6.3 l/s = 21.9 l/s x R 525,280 = R 151,108
- Item BRRW2.2: 0%
- Item 1: 100%

Total: R 360,448
3. CONCLUSION

The developer of Erf 3 will be liable for the larger amount of R 360 548 (excluding VAT) or the Bulk Services Levy (as calculated by the Breede River Wine lands Municipality) as a contribution towards water infrastructure.

Over and above this contribution, the developer will also be liable for the construction of the internal booster pump station as indicated on Figure 1.

We trust you find the above of value.

Yours sincerely,
COMMUNITY ENGINEERING SERVICES
REG. NO. 96/13326/07

[Signature]

Pen: JJ STREICHER

Copy to: The Manager, Civil Engineering Services
Breede River Wine lands Municipality
Private Bag X2
Ashton
6715

Attention: Mr Klaas Koegelenberg