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- Geotechnical Instrumentation
 - Geotechnical Monitoring
- Rockfall Protection Systems
 - Rock Engineering
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24th January 2013

Attention: Ms Rebecca Bowd

Green Door Environmental
400 Old Howick Road
Hilton
3245

GZ Ref: 13-002L01

Dear Rebecca

PERCOLATION TESTS AT FROST POCKET, WARTBURG, KWAZULU-NATAL

GeoZone GeoServices were requested by Ms R Bowd of Green Door Environmental on the 18th December 2012 to provide a cost estimate to carry out percolation tests at the above property in Wartburg. A price was submitted to Ms R Bowd on 19th December 2012 following which GeoZone GeoServices was appointed via electronic mail on 19th December 2012 to proceed with the work as proposed.

The percolation test results are presented in Table 1 below:

Table 1: Results of Percolation Tests and Rates of Application of Effluent

Elapsed Time (mins)	Fall in Water Level (mm)	
	PT1	PT2
0	0	0
5	20	31
10	41	57
15	58	80
20	70	95
25	79	113
30	90	122
Depth of Test (m)	0.7 – 1.0	0.7 – 1.0
Status	Pass	Pass
Percolation Rate (mins.)	6.1	4.0
Rate of Application of Effluent (litres /square metre of pit sidewall/day)	95	104

The results show that the soils are suitable for effluent disposal via French drains and the rates of application of effluent are as per those given in Table 1.

In general, French drains should be sited and constructed so as not to cause the pollution of any public stream, spring, well or water source that is used, or that is likely to be used, for drinking, domestic or kitchen purposes.

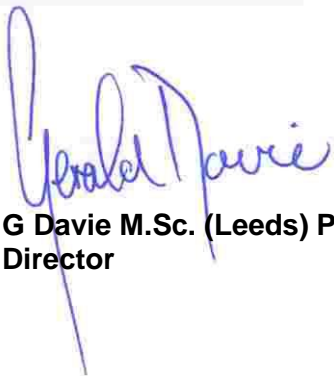
French drains should preferably be constructed along the contours and shall be located at least 5 m away from any buildings. They should be so positioned that the foundations of the structures are not adversely affected by their discharge.

The size of the septic tank, French drains and evapotranspiration area depends on the amount of effluent generated by the development, and these figures are currently not available. However GeoZone GeoServices will gladly assist in this regard should the need arise.

The design of the septic tanks is beyond the scope of this report, however should it be required. GeoZone GeoServices can advise on sizing and design details. In terms of the French drains, these should be backfilled with clean rubble or suitably-sized stone and not old car tyres which is a common and unsatisfactory practice. In calculating the size of the French drains, the base of the excavation should not be included as this ultimately becomes ineffectual due to clogging and accumulation of fatty acids and other debris.

We trust that this meets with your immediate requirements. Should you have any queries with regard to the above, please do not hesitate to contact us.

Yours faithfully,
For GeoZone GeoServices



**G Davie M.Sc. (Leeds) Pr. Sci. Nat
Director**