

# **Croydon Vineyard Estate**

## **Water Management Committee Report for the Special General Meeting**

### **1 Introduction**

As residents of Croydon Vineyard Estate we are all well aware of the current water crisis in the Western Cape. The shortage of water is currently the worst in living memory with the possibility of little or no water available in the dams by the end of March 2018. As such a Croydon Water Management Committee was set up recently to investigate the current water usage at Croydon Vineyard Estate both domestic and irrigation as well as alternative means of supplying water to the Estate. At this point it is worth reminding ourselves of the reasons why we all decided to buy property in the Vineyard Estate. We are sure that top of the list for most residents is the vineyards themselves and as a result the landscaping and large open areas between the homes. This along with the winery provides a lifestyle that we all enjoy and no doubt adds tremendous value to our homes. Taking cognizance of this, one of the most important matters requiring attention is the security of irrigation to the vineyards – an insurance policy. The investigation that followed therefore was to look at alternative means of supplying water for irrigation purposes and which in turn led to looking at the potential of supplying domestic water as well. Whilst the investigation is ongoing the following is a synopsis of the findings to date and the proposed alternative ways forward.

### **2 Current Supply and Usage of Water**

#### **2.1 Supply**

Currently domestic water is supplied by the City of Cape Town via an external water reticulation system into our own internal reticulation system. This water is used for domestic purposes only and is currently not used for irrigation or landscaping purposes.

There are two boreholes on the property which are used either to top up the irrigation dams or directly used to irrigate the vineyards.

The Estate is also allowed to draw off water into the dams from the Eerste Rivier the level of which is currently dropping and unlikely to supply any useable water in the near future. It should also be noted that the current quality of the water is extremely poor with high counts of e coli. This along with other parameters renders the water unsuitable for vineyard irrigation purposes.

#### **2.2 Usage**

It must be stated upfront that since the implementation of maximum daily water usage by Cape Town City Council, Croydon Vineyard Estate has been remarkable in keeping below such maximum daily demands. The overall usage of domestic water has reduced from 1300 kilolitres per day to 600 kilolitres per day with the requirement for irrigation purposes remaining as necessary over the relevant months. If we do not implement additional water for the vineyard irrigation the daily volumes will have to be reduced with potentially harmful side effects.

### **3 Status of Investigation into Augmentation of our current Water Supply**

#### **3.1 Water Treatment Plant**

The Committee have been investigating the potential of constructing a water treatment plant on the estate. Water to such a treatment plant would have to be supplied via the existing and potentially additional boreholes. In this regard the first item to tick off the list is the yield of both existing boreholes and hence a Consulting Engineering Company called GEOSS have been appointed to carry out the relevant pump tests. These tests not only give the maximum yield of each borehole but also the recovery rate which is essential to understand the maximum volume the borehole can pump as well as an indication of the size of the aquifer from which they are pumping.

The treatment plant being considered is known as a reverse osmosis plant which will essentially take the borehole water and treat it such that the water at the end of the process is suitable for irrigation purposes. The process is such that the quality is also sufficient for domestic use (potable) and indeed is so pure that certain additives are required at the end of the process in order to simply make the water taste better. Hence in keeping with the original mandate the Committee investigated first a Plant that would treat groundwater sufficient to supply the irrigation needs of the Vineyard. This was subsequently increased to consider irrigation to landscaping and individual gardens. However on further investigation it became obvious that there was an order of magnitude to the proposed treatment plant which highlighted the potential of increasing the capacity of the Plant to include for domestic water with the increase in costs not in proportion to the increase in volumes being treated. This of course depends on the availability of water from the boreholes. The two options that have then been considered are:

- a) Reverse Osmosis Plant to ensure Irrigation water to the vineyards, landscaping and individual gardens.
- b) Reverse Osmosis Plant to ensure irrigation water to the vineyards, landscaping and individual gardens as well as the domestic demand.

The costs of these two alternatives will be discussed later.

#### **3.2 Treated Effluent from the Macassar Treatment Works**

Currently there is a pipeline which has been laid from the Macassar Treatment Works to the western boundary of the Sitari Development which as you are aware is in close proximity to the Vineyard Estate. The pipeline conveys treated effluent from the Treatment Works and it is the intention of the City of Cape Town (COCT) to continue with this pipeline to service the Olive Estate, the Vineyard Estate and Kelderhof Estate. Unfortunately COCT do not have the funds at present to extend the pipeline and are unlikely to be able to implement this project within the next 3 to 5 years. An investigation is currently underway to explore the costs of constructing the section of pipeline between Sitari and Croydon Vineyard Estate thus being able to make use of the treated effluent for the irrigation of the vineyard and

perhaps the landscaping and individual gardens. The potential cost of this alternative will be discussed later along with the implications regarding COCT and the future cost of water.