KNP CONCESSIONS

WATER ALLOCATIONS PROCEDURE

THE REVISION OF THE WATER ALLOCATION OF THE KNP CONCESSIONS

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1. **Introduction**

The responsible use of water in a water scarce country such as South Africa, is not only the right thing to do, but is also necessary to ensure sustainable use of these sources. Historically, National Parks developed Restcamps and Staff Villages with large gardens, with the result that the average use per head in Kruger (Staff and Guests) is between 1000 and 1500 l/p/day.

During the Concession Bidding Phase, the issue of water allocation was finalized at 250 l/p/day. *(This figure was based on the international standards for domestic use. The British Standards for Domestic use varies between 200 and 350 l/p/day. This excludes any agricultural and industrial use)* The allocation was based on water savings devices used, with no irrigation. This figure was moved up to 350 l/p/day during the Bidding Process, after the Concessionaires claimed that it will not be possible to manage on only 250 l/p/day.

2. **Operational Requirements**

Although the Concessions are not allowed any agricultural water (water for irrigation), it was soon realized that it was unrealistic not to have included an industrial component (kitchen, swimming pools, in-house laundry (only guests laundry and smaller items), gym, wellness centre, etc.). The majority of the Concessions battled to stay within their water limits, even at the current low occupancies. At the KNP Management Committee Meeting of May 2004, it was agreed that the water allocation of the Concessions can be re-looked at, under the following conditions:

   a) The Concessionaires be given the opportunity to evaluate their water usage, and submit a proposal for additional water, should the investigation prove that industrial water requirements were under-estimated by SANParks.

   b) No additional water be allocated if the concession water sources cannot support the increased water usage. (Water sources must be adequate to provide at least double the maximum water requirement).

   c) No additional water be allocated if the water saving devices and procedures as recommended, have not been installed and implemented.

The Concessions were given an opportunity to measure actual use over a 6-month period, and to present this information to be used as a basis to re-calculate the water allocation. From this exercise, the following important issues were noted:

   a) Staff and Guests did not use the same amount of water *(Current allocation give 350 l/p/day for staff and guests)*
b) No provision were made for Day Staff (Day Staff not only eat at least once at the lodge and also use basins and toilets, but in some cases day staff must shower after a hot and sweaty day, before returning back home)

c) The industrial water use was not directly dependant on the amount of guests. (Swimming pools get dirty with or without guests, kitchen floors are washed daily irrespective of the amount of guests, etc.)

d) Due to the tight water allocations, the allocated figure of 350 l/p/day was used for full compliment, even while guest occupancies were on average below 30%. Several water saving monitoring measures were installed, to ensure water use is controlled on a daily basis (It was therefore obvious that the Concessions will not be able to stay within their budgets if the guests numbers increase to 50% plus.

e) The tourists in the five star market expect certain basic bathroom facilities that is associated with five star accommodation (even in arid or desert land such as Dubai, etc), and it include large baths, double showers with huge shower roses, etc. Some of the baths installed in the concessions, can take 400 liter plus.

3. Recommendations

3.1 Water allocation

Based on the information received, a new water allocation is recommended as follows (See Appendix A):

a) **Variable amount allocated:** (Will depend on actual numbers on site):

<table>
<thead>
<tr>
<th></th>
<th>350 l/day</th>
<th>270 l/day</th>
<th>40 l/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent Staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day Staff</td>
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</tbody>
</table>

**Note:** During periods of approved construction when contractors either reside on site, or are there as day staff, the above allocations will also apply to them.

b) **Fixed amount allocated:** (Will be fixed, and based on the approved Guest beds)

<table>
<thead>
<tr>
<th></th>
<th>240 l/day</th>
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</thead>
<tbody>
<tr>
<td>Guests</td>
<td></td>
</tr>
</tbody>
</table>
3.2 **Conditions for receiving additional water**

Although the Concessionaires have all gone a long way to ensure that water use is monitored, they still don’t haven’t implemented water saving techniques, specifically for Staff water use. In addition to that, certain Concessions have not fully developed and tested their water sources. In order to qualify for additional water, the Concessions will have to get their house in order, and must comply fully with the following conditions:

1) **All irrigation and water-for-game at lodge and staff housing must come from grey water systems.**

2) **Staff housing and ablutions should be fitted with water saving devices (toilets, showers, etc), and staff usage should be metered and controlled.**

3) **Where swimming pools of an unreasonable size or number were installed, these pools should be filled with water trucked in from outside the KNP (As undertaken by some of the concessionaires when queried during the development phase), and all swimming pools should have water saving cleaning systems not requiring frequent backwashing.**

4) **All laundry should be done off site, except guest laundry done on site.**

5) **The existing infrastructure (boreholes, extraction points, sewerage systems and reedbeds) must be checked and upgraded if necessary, before any additional water can be allocated. The minimum criteria for a water source are that the Main and Back-up source should be able to produce double to maximum daily requirement. Water sources must be tested by an independent consultant.**

6) **A formal daily logsheet must be kept of water use, staff and guest numbers. This logsheet must be audited annually by the external auditors.**

In order to qualify, the Concessionaire must appoint the ECO to evaluate the Concession against the 6 Conditions, and to submit a detailed Water Analyses Report to KNP for approval.
## APPENDIX A

<table>
<thead>
<tr>
<th></th>
<th>Lukimbi</th>
<th>Jock</th>
<th>Mpana</th>
<th>Tinga</th>
<th>Imbali</th>
<th>Rhino</th>
<th>Singita</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guests</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent Staff</td>
<td>32</td>
<td>22</td>
<td>64</td>
<td>48</td>
<td>48</td>
<td>28</td>
<td>42</td>
</tr>
<tr>
<td>Day Staff</td>
<td>31</td>
<td>30</td>
<td>60</td>
<td>45</td>
<td>29</td>
<td>19</td>
<td>10</td>
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<tr>
<td><strong>Permanent Staff use per day (Variable)</strong></td>
<td>270</td>
<td>2160</td>
<td>2160</td>
<td>4320</td>
<td>5940</td>
<td>3240</td>
<td>2160</td>
</tr>
<tr>
<td><strong>Day Staff use per day (Variable)</strong></td>
<td>40</td>
<td>1240</td>
<td>1200</td>
<td>2400</td>
<td>1800</td>
<td>1160</td>
<td>760</td>
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<tr>
<td><strong>Guests use per day (Variable)</strong></td>
<td>350</td>
<td>11200</td>
<td>7700</td>
<td>22400</td>
<td>1680</td>
<td>16800</td>
<td>9800</td>
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<tr>
<td><strong>Industrial (Baseline)</strong></td>
<td>240</td>
<td>7680</td>
<td>5280</td>
<td>15360</td>
<td>11520</td>
<td>11520</td>
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<tr>
<td>New allocation @ 30% occupancy</td>
<td>14440</td>
<td>10950</td>
<td>28800</td>
<td>24300</td>
<td>20960</td>
<td>12580</td>
<td>32170</td>
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<tr>
<td>New allocation @ 50% occupancy</td>
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<td>12490</td>
<td>33280</td>
<td>27660</td>
<td>24320</td>
<td>14540</td>
<td>35110</td>
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<tr>
<td>New allocation @ 65% occupancy</td>
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<td>13645</td>
<td>36640</td>
<td>30180</td>
<td>26840</td>
<td>16010</td>
<td>37315</td>
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<tr>
<td>Old water allocation</td>
<td>14000</td>
<td>10500</td>
<td>28000</td>
<td>24500</td>
<td>21000</td>
<td>12600</td>
<td>37100</td>
</tr>
</tbody>
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**Assumptions**

1. **Permanent Staff**
   - Shower (low flow shower head) 125
   - Toilet (low flo 3 x 5 l) 15
   - Washing and shaving 10
   - Dishes and laundry 80
   - Cooking & drinking 40

2. **Day Staff**
   - Toilet (low flo 3 x 5 l) 15
   - Washing 10
   - Cooking & drinking 15

3. **Guests**
   - Bath & Shower 290
   - Toilet (4 x 10) 40
   - Shaving & washing 350

4. **Industrial (Base Load)**
   - Kitchen (Cook/dishes) 75
   - Laundry (guests linen) 65
   - Swimming pools, etc. 25
   - Cleaning, washing, etc. 75

Average increase is 0 %
Average increase is 13.6 %
Average increase is 24.4 %