

## **PILOT GREY-WATER HARVESTING and USAGE STUDY: 05/01/06- 08/01/06**

### MECHANISMS:

- One Brac Systems B52 (W200) Harvesting, Storage and Transfer Station
- One Sump Pump

### PILOT DWELLING:

- Single Family Home Located in Ruidoso New Mexico

### NUMBER OF OCCUPANTS:

- Two adults and two teenagers

### AVERAGE POTABLE WATER VOLUME USED DAILY

- One Jacuzzi Tub/Shower
  - Two Showers/day (one male & one female) = *50 gallons/day*
  - One Jacuzzi/week is 70 gallons or = *10gallons/day*
- One Bathroom Sink = *2 gallons/day*
- One Clothes Washing Machine
  - One large load of cloths daily = *55gallons/day*

### AVERAGE TOTAL GREY-WATER HARVESTED OVER 90 DAYS

- Jacuzzi Tub/Shower = *60gal x 90days = 5,400 gallons*
- Bathroom Sink = *2gal x 90days = 180 gallons*
- Clothes Washing Machine= *55gal x 90days = 4,900 gallons*

Total = ***10,480 gallons***

### AVERAGE TOTAL HARVESTED GREY-WATER USED OVER 90 DAYS

- One 1.5 gallon low flow toilet
  - 20 flushes/day = *30 gallons/day*
  - 30 gal/day x 90 days = *2,700 gallons*
- Irrigation, fruit trees and landscape
  - 10,480 total gallons minus 2,700 toilet gallons = *7,780 gallons*

### DATA ANALYSIS COMPARISONS AND OBSERVATIONS

During the term of this water conservation study, the local area was in a severe drought condition. As the statistics show most of the harvested grey-water was used for irrigation for plants and trees, which otherwise would have died from the drought conditions. Although the use of grey-water for irrigation depends on local laws, in areas of the country where grey-water can be used for irrigation, this one use of the Brac System can save homeowners and businesses hundreds of dollars on landscaping during unpredictable dry conditions, not to mention the benefit of water conservation for the municipality.

## Year-over-Year comparison of water consumption from the Pilot Dwelling

(Hottest and Driest month of the year)

- Time period 06/01/05 - 06/28/05
  - Total volume of water used according to official records = **17,870 gallons**
- Time period 06/01/06 - 06/27/06
  - Total volume of water used according to official records = **5,340 gallons**

During this one month the total savings in dollars from June 2005 water usage compared to June 2006 water usage was \$41.56, and I still have all my fruit trees and expensive landscaping, not to mention I saved 335% more water!

This Pilot Dwelling has only one Brac B52 unit that flushes only one toilet, the only low-flow toilet in the house. Two more toilets are flushed daily in the home along with another Shower/Tub being used daily. Soon a Brac B52 will be installed on this side of the house to harvest and use this grey-water.

### OBSERVATIONS:

While irrigation is seasonal, flushing toilets is daily. The low-flow 1.5 gallon toilet in this Pilot Project saved 2,700 gallons for 90 days or 10,800 gallons per year. If just 1,000 Brac Systems were installed in severe drought areas without any irrigation benefits, the compounded water conservation using the Pilot Project low-flow toilet data would be 10,800,000 gallons of water per year. This is a very low estimate of the compounded effect possible with the Brac Systems. Most residents have two 3.5 gallon toilets and are flushing millions of gallons of water down the drain.

### CONCLUSION:

Although this data reflects average estimated volumes, the conclusion is obvious:

Brac Systems save water and money. I am completely satisfied with the operation and performance of this cutting edge water conservation system. Every home and business should have one. The use of chlorine tablets and proper filter maintenance are the only service procedures necessary. Grey-water Harvesting using a Brac System is a water conservation milestone.

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