



# RAINWATER HARVESTING STORAGE WORKSHEET

Optimize your storage volume



WEATHER STATION:

PROJECT NAME: Test

DATE: July 21, 2017



MONTH	INPUTS												TOTAL
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
Washington State Precipitation (Inches)	4.2	2.1	2.0	1.6	1.5	1.1	0.8	0.9	1.4	2.7	4.0	2.8	25.1
Household Usage (US gals)	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	30,000
Irrigation/Outside Usage (US gals)						1,000	2,000	2,000	2,000	1,500			8,500
Total Usage (US gals)	2,500	2,500	2,500	2,500	2,500	3,500	4,500	4,500	4,500	4,000	2,500	2,500	38,500

MONTH	OUTPUTS												TOTAL
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
Precipitation Received from Roof (US gals)	5,898	2,949	2,809	2,247	2,107	1,545	1,124	1,264	1,966	3,792	5,618	3,932	35,250
Start of Month in Storage (US gals) (Last Dec.)	4,550	6,000	6,000	6,000	5,747	5,354	3,398	22	0	0	0	3,118	
Overflow Volume - wastage (imp gals)	1,948	449	309	0	0	0	0	0	0	0	0	0	2,706
End of Month in Storage (US gals) (make-up)	6,000	6,000	6,000	5,747	5,354	3,398	22	(3,214)	(2,534)	(208)	3,118	4,550	

SELECTED TANK CAPACITY (US GALS)	6,000
ROOF AREA (SQFT)	2,500
ROOF EFFICIENCY	0.9

ANNUAL OVERFLOW VOLUME (WASTAGE)	8%
ANNUAL MAKE-UP WATER (SHORTFALL)	-15%

This worksheet enables you to evaluate how your rainwater system will perform on a month to month basis. Click 'Enable Content' and type in your nearest weather station (drop down menu). Estimate your household and/or irrigation needs for each month of the year. Before using this worksheet you must know the roof sections you have available, and for sloped roofs, the area projected on a horizontal plane. The collection efficiency depends on the type of roof surface you have. For example, a metal roof may have a collecting efficiency of 95%, whereas a shake roof may be 85% (Evaporation, absorption). The roof type will also influence water quality.

Now we come to the most important and major part of your rainwater system - the STORAGE TANK. The RAIN-TANK program allows you to enter different tank capacities and instantly review the monthly effect on the system.

Try several tank capacities, and for each capacity entered, the table will show you which months you are overflowing (full tank-usually winter) and which months you need to make up water (usually summer). Increase capacity until no change in performance is noted.

The **Optimal Tank Capacity** will be where you have minimum annual wastage and minimum or zero make-up needed.

This worksheet provides an estimate based on average data. We recommend increasing the storage tank capacity 25% - 50% to accommodate higher than average rainfall. The tank height should include a 6" residual depth in the bottom.

We hope you find this worksheet helpful in determining your storage tank capacity, however we carry no responsibility for the system design or the worksheet input and output data.

- Notes:
- Performance based on monthly averages.
  - Bracketed numbers indicate rainwater shortfall
  - Precipitation includes snowfall
  - Useful links:
    - \*[Rainwater Guide for Homeowners - CMHC](#)
    - \*[Irrigation Discussion](#)
    - \*[Irrigation Calculator](#)
    - \*[Premierplastics.com](#)

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