



- **SAMPLE WATER SYSTEM ANALYSIS REPORT**
- **RESIDENTIAL SAMPLE WASTEWATER SYSTEM ANALYSIS REPORT**
- **TABLE 1 - UNIT DAILY NON-RESIDENTIAL WASTEWATER DESIGN FLOWS FROM ARIZONA ADMINISTRATIVE CODE – TITLE 18, CHAPTER 9, ARTICLE 3**

SAMPLE WATER SYSTEM ANALYSIS REPORT

- **SIZE:** The “SAMPLE” DEVELOPMENT contains 85 single family residential lots
- **LOCATION:** NE ¼, NE ¼, SECTION 2, T4N, R1E, Gila and Salt River Meridian; Southwest corner of Jomax Road and 75th Avenue
- **ZONING:** Zoning is currently R1 and has not changed since January 1995*
* - A statement of complete zoning history from current back to Jan 1995 is required in this analysis

DOMESTIC (RESIDENTIAL) * WATER DEMAND CALCULATIONS:

(* - **COMMERCIAL** WATER DEMAND CALCULATIONS MUST USE “BEST ENGINEERING JUDGEMENT” AND REFERENCE ALL SOURCE(S) USED FOR BASIS OF DESIGN)

Average Daily Demand:

1. The average daily demand is 200 gallons per day capita (200 gpcd)*
2. The lost and unaccounted for water factor is 0.90*
3. The average population per dwelling unit is 2.8 persons*
4. The average daily demand per dwelling unit is therefore:
$$[(200 \text{ gal/capita/day}) \times (2.8 \text{ persons/du})] / (0.90) = 622 \text{ gal/day/du}$$
5. The average daily demand for “Sample” Development is therefore:
$$(85 \text{ du}) \times (622 \text{ gal/day/du}) = 52,870 \text{ gal/day}$$

Maximum Daily Demand:

1. The maximum day demand is equal to 1.8 times the average day demand*
2. The maximum daily demand per dwelling unit is therefore:
$$(622 \text{ gal/day/du}) \times (1.8) = 1120 \text{ gal/day/du}$$
3. The maximum daily demand for “Sample” Development is therefore:
$$(85 \text{ du}) \times (1120 \text{ gal/day/du}) = 95,200 \text{ gal/day}$$

Peak Hour Demand per Dwelling Unit:

1. The peak hour demand is equal to 1.7 times the maximum day demand*
2. The peak hour demand per dwelling unit is therefore:
$$(1120 \text{ gal/day/du}) \times (\text{day}/24 \text{ hour}) \times (\text{hour}/60\text{min}) \times 1.7 = 1.32 \text{ gal/min/du}$$

Total Peak Hour Demand for “Sample” Development:

$$(85\text{du}) \times (1.32 \text{ gal/min/du}) = 112 \text{ gal/min}$$

* - Source: City of Peoria Water Master Plan, September 2001; Table 10-1

- In addition to the peak hour Domestic Water Demand, the system will be required to provide for Fireflow requirements as per the City of Peoria Water Master Plan.
- ALL DOMESTIC AND FIREFLOW WATER SYSTEM ANALYSIS REPORTS REQUIRE A QUALIFIED PROFESSIONAL’S SEAL & SIGNATURE.

RESIDENTIAL SAMPLE WASTEWATER SYSTEM ANALYSIS REPORT

- **SIZE:** The “SAMPLE” DEVELOPMENT contains 85 single family residential lots
- **LOCATION:** NE ¼, NE ¼, SECTION 2, T4N, R1E, Gila and Salt River Meridian; Southwest corner of Jomax Road and 75th Avenue
- **ZONING:** Zoning is currently R1 and has not changed since January 1995*
* - A statement of complete zoning history from current back to Jan 1995 is required in this analysis

***DOMESTIC (RESIDENTIAL)* * WASTEWATER FLOW CALCULATIONS:**
(* - **COMMERCIAL** WASTEWATER FLOW CALCULATIONS MUST USE A.A.C. TITLE 18, CHAPTER 9, ARTICLE 3, TABLE 1 - UNIT DAILY DESIGN FLOWS)

Average Daily Flow per Dwelling Unit:

1. The average daily flow is 100 gallons per day per capita (100 gpcd)*
2. The average population per dwelling unit is 2.8 persons*
3. The Average daily flow per dwelling unit is therefore:
 $(100 \text{ gal/capita/day}) \times (2.8 \text{ persons/du}) = 280 \text{ gal/day/du}$

* - Source: City of Peoria 2002 Wastewater Master Plan

Maximum Daily Flow per Dwelling Unit:

1. The maximum day is equal to 4.0 times the average day flow
2. The maximum daily flow per dwelling unit is therefore:
 $(280 \text{ gal/day/du}) \times (4.0) = 1120 \text{ gal/day/du}$

Total Maximum Daily Flow for “Sample” Development:

$$(85 \text{ DU}) \times (1120 \text{ GAL/DAY/DU}) = 95,200 \text{ GAL/DAY}$$

**ALL WASTEWATER SYSTEM ANALYSIS REPORTS AND ZONING
STATEMENTS REQUIRE A QUALIFIED PROFESSIONAL'S SEAL &
SIGNATURE.**

**TABLE 1 - UNIT DAILY NON-RESIDENTIAL WASTEWATER DESIGN FLOWS
FROM ARIZONA ADMINISTRATIVE CODE – TITLE 18, CHAPTER 9, ARTICLE 3**

Note: Unit flow rates published in standard texts, literature sources or relevant area or regional studies shall be considered by the Department, if appropriate to the project.

Historical Note - New Section adopted by final rulemaking at 7 A.A.R. 235, effective January 1, 2001 (Supp. 00-4).

Type of Facility Served	Applicable Unit	Sewage Design Flow per Applicable Unit, Gallons Per Day
Airport	Passenger (average daily number)	4
	Employee	15
Apartment Building	Resident (if max. number fixed)	100
1 bedroom	Apartment	200
2 bedroom	Apartment	300
3 bedroom	Apartment	400
4 bedroom	Apartment	500
Auto Wash	Facility	Per manufacturer, if consistent with this Chapter
Bar/Lounge	Seat	30
Barber Shop	Chair	35
Beauty Parlor	Chair	100
Bowling Alley (snack bar only)	Lane	75
Camp		
Day camp, no cooking facilities	Camping unit	30
Campground, overnight, flush toilets	Camping unit	75
Campground, overnight, flush toilets and shower	Camping unit	150
Campground, luxury	Person	100-150
Camp, youth, summer, or seasonal	Person	50
Church		
Without kitchen	Person (maximum attendance)	5
With kitchen	Person (maximum attendance)	7
Country Club	Resident Member	100
	Nonresident Member	10
Dance Hall	Patron	5
Dental Office	Chair	500
Dog Kennel	Animal, maximum occupancy	15
Hospital		
All flows	Bed	250
Kitchen waste only	Bed	25
Laundry waste only	Bed	40
Hotel/motel		
Without kitchen	Bed (2 person)	50
With kitchen	Bed (2 person)	60
Industrial facility		
Without showers	Employee	25
With showers	Employee	35
Cafeteria, add	Employee	5
Institutions		
Resident	Person	75
Nursing home	Person	125
Rest home	Person	125
Laundry		
Self service	Wash cycle	50
Commercial	Washing machine	Per manufacturer, if consistent with this Chapter
Office Building	Employee	20

**TABLE 1 - UNIT DAILY NON-RESIDENTIAL WASTEWATER DESIGN FLOWS
FROM ARIZONA ADMINISTRATIVE CODE – TITLE 18, CHAPTER 9, ARTICLE 3**

Note: Unit flow rates published in standard texts, literature sources or relevant area or regional studies shall be considered by the Department, if appropriate to the project.

Historical Note - New Section adopted by final rulemaking at 7 A.A.R. 235, effective January 1, 2001 (Supp. 00-4).

Park		
Picnic, with showers, flush toilets	Parking space	40
Picnic, with flush toilets only	Parking space	20
Recreational vehicle, no water or sewer connections	Vehicle space	75
Recreational vehicle, with water and sewer connections	Vehicle space	100
Mobile home/Trailer	Space	250
Residence		
Single Family Residence - see City of Peoria WWMP		
Mobile home, family	Home lot	250
Mobile home, adults only	Home lot	150
Seasonal and summer	Resident	100
Restaurant/Cafeteria	Employee	20
With toilet, add	Customer	7
Kitchen waste, add	Meal	6
Garbage disposal, add	Meal	1
Cocktail lounge, add	Customer	2
Kitchen waste disposal service, add	Meal	2
Restroom, public	Toilet	200
School		
Staff and office	Person	20
Elementary, add	Student	15
Middle and High, add	Student	20
with gym & showers, add	Student	5
with cafeteria, add	Student	3
Boarding, total flow	Person	100
Service Station with toilets	First bay	1000
	Each additional bay	500
Shopping Center, no food or laundry	Square foot of retail space	0.1
Store	Employee	20
Public restroom, add	Square foot of retail space	0.1
Swimming Pool, Public	Person	10
Theater		
Indoor	Seat	5
Drive-in	Car space	10