

**Amador Water Agency  
Martell Wastewater Rate Study  
AMENDED FINAL REPORT**

August 28, 2009



**THE REED GROUP, INC.**

## TABLE OF CONTENTS

AMENDED FINAL REPORT .....	3
INTRODUCTION .....	3
WASTEWATER RATE RECOMMENDATIONS .....	3
CURRENT WASTEWATER RATES.....	5
FY 09-10 REVENUE REQUIREMENT .....	5
CUSTOMER ACCOUNT, WATER USE, AND STRENGTH CHARACTERISTICS .....	6
DETERMINATION OF UNIT COSTS .....	7
ALLOCATION OF COSTS TO CUSTOMER CLASSES.....	9
WASTEWATER RATE DESIGN.....	9
THREE-YEAR WASTEWATER RATE RECOMMENDATIONS .....	12
<b>APPENDIX A – MARTELL WASTEWATER FINANCIAL PLAN.....</b>	<b>14</b>
<b>APPENDIX B – SEWER STRENGTH CLASSIFICATIONS .....</b>	<b>16</b>

### **AMENDED FINAL REPORT**

This amended final report reflect changes to the budget for the Martell wastewater system and a reduction in the amount of the wastewater rate increase from what had been proposed and presented during a public hearing held on June 11, 2009. As a result of the direction provided by the Board of Directors, Agency staff made significant cuts to the proposed budget for FY 09-10. These changes resulted in a lowering of the annual wastewater revenue requirement for FY 09-10 from \$534,000 to \$491,350, a reduction of about 8 percent. This amended report presents revised wastewater rate calculations consistent with the reduced revenue needs.

During the public hearing on June 11, 2009, the Board adopted the proposed wastewater rates, but did so recognizing the lower wastewater rates would result from the changes in the budget. The wastewater rates presented herein are all lower than those adopted in June. No formal action is required by the Board of Directors to now implement rates that are lower than those approved through the public hearing process.

The remainder of this report is largely the same as the previous final report. Most of the exhibits have been updated to reflect the changes described above. Minor changes have been made to the text of the report, for the same reason.

### **INTRODUCTION**

This report presents wastewater rate recommendations for the Martell wastewater system (Improvement District No. 12). Rate recommendations are based on the revenue needs for FY 09-10 through FY 11-12, as determined by Agency staff, with cost allocation and rate design performed by The Reed Group, Inc. The purpose of this study was to develop wastewater rates that improve equity between customers with consideration of the potential demand each customer can place on the wastewater system, actual use of the system, and relative strength characteristics (loading) of wastewater generated by various types of customers. This report reflects comments and direction provided by the Agency Board of Directors made during a regular board meeting held on March 12, 2009 as well as direction to reduce the budget and proposed wastewater rates during a public hearing held on June 11, 2009.

### **WASTEWATER RATE RECOMMENDATIONS**

Agency staff has determined that wastewater rates in the Martell wastewater system should generate about \$491,350 in FY 09-10 to meet financial obligations and objectives reflected in a multi-year financial plan. This level of revenue represents about a 15 percent increase relative to the current amount of revenue generated by wastewater rates. Even with this large increase, wastewater rates will not fully cover current operating and maintenance costs, and will not provide any funding for rehabilitation and upgrade of the wastewater collection system. Additional rate increases in subsequent years of the planning period will be needed to meet the full financial obligations of the wastewater utility.

The current financial situation is the result, in part, of the following two changes:

- A significant increase in the amount charged by the City of Sutter Creek for wastewater treatment services, as well as the method of billing.

- Increased ARSA costs for the disposal of treated wastewater.

The Agency's costs for operating and maintaining the Martell wastewater collection system have been estimated to change very little in FY 09-10, relative to current costs. Additional details of the financial plan prepared by the Agency are provided in **Appendix A** of this report.

**Exhibit 1**, on the following page, presents proposed wastewater rates for the Martell wastewater system for FY 09-10 through FY 11-12. The wastewater rates are based on the revenue needs, as determined with the financial plan, and current customer account and water usage data for customers of the wastewater system. Changes in the rate structure are proposed to improve the equity between customers. Proposed wastewater rates better reflect the cost of providing wastewater services to customers of the wastewater system.

With the change in the wastewater rate structure proposed to be effective in July 2009, customers will experience different changes in the amount of their wastewater bills. Some bills will increase more than others, and some will decrease. In all cases, however, the proposed wastewater rates will be fairer because the proposal improves how costs are allocated to each customer by reflecting each customer's capacity requirement, contribution to wastewater flows, and strength characteristics of the wastewater.

**Exhibit 1**  
**Amador Water Agency -- Improvement District No. 12 (Martell)**  
**Wastewater Rates**

	July 2009	July 2010	July 2011	
<b>Residential Wastewater Rates</b>				
Single Family Dwellings	\$ 55.99	\$ 64.39	\$ 74.05	per DU
<b>Commercial/Industrial Wastewater Rates (2)</b>				
Fixed Service Charge (3)				
All Non-Resid. Users	\$ 18.08	\$ 20.79	\$ 23.91	per EDU
Volumetric Charge (4)				
Low Strength Users	\$ 6.91	\$ 7.95	\$ 9.14	per CCF
Medium Strength Users	\$ 8.43	\$ 9.70	\$ 11.15	per CCF
High Strength Users	\$ 11.48	\$ 13.20	\$ 15.18	per CCF

**Notes:**

- (1) Current wastewater rates are based on number of equivalent dwelling units (EDUs). Single family dwellings are charged as 1 EDU.
- (2) Proposed monthly non-residential wastewater bills to be determined as the sum of a fixed service charge (based on EDUs) and a volumetric charge based on winter water usage (CCF = 100 cubic feet).
- (3) The number of EDUs of each account is determined based on the Agency's regulations.
- (4) Volumetric charge is based on average monthly water usage from February and March of each year.

Details of the methods used to allocate costs and calculate the wastewater rates are included in the remainder of this report.

### **CURRENT WASTEWATER RATES**

Currently, the Agency charges residential customers in the Martell wastewater system \$46.00 per month for wastewater services and commercial customers \$75.00 per month per equivalent dwelling unit (EDU). The number of EDUs associated with each commercial account is currently determined annually by the Agency based on winter water usage (1 EDU = 200 gpd = 8 CCF per month). Winter water usage is used because this is when irrigation water use is at a minimum, and it is reasonable to assume that water used returns to the wastewater system.

There are three shortcomings of the current system of wastewater rates:

- The current rates do not reflect the fact that different types of customers generate wastewater with different strength characteristics. Wastewater treatment requirements for high strength wastewater are greater than for low strength wastewater. The amount charged by the City of Sutter Creek for wastewater treatment is based, in part, on the strength of the wastewater sent to the treatment plant from the Martell wastewater system.
- The current rates do not reflect the capacity assigned to each wastewater customer. When connecting to the wastewater system new customers pay for a certain amount of capacity based on anticipated demands. The Agency provides collection system capacity and has acquired treatment capacity to meet the potential needs of its customers. Customers currently pay for service based on actual usage, even though a portion of costs are related to providing and maintaining system capacity.
- Mobile homes are currently charged the same amount as single family residences, even though winter water usage is significantly lower for mobile homes, relative to single family usage.

The wastewater rates developed in this study are intended to correct each of these shortcomings, and thereby result in improved equity and better reflect the cost of providing service.

### **FY 09-10 REVENUE REQUIREMENT**

The revenue needs of the Martell wastewater system were determined by Agency staff using a multi-year financial planning model. **Appendix A**, at the end of this report, presents the financial plan summary prepared by the Agency. The financial plan indicates that \$491,350 in wastewater service charge revenue is needed in FY 09-10 to meet current and long-term financial objectives. The wastewater rates developed in this study and presented in this report are intended to produce this \$491,350 in annual wastewater revenue. It should be noted that annual wastewater system costs for FY 09-10 have been estimated in the financial plan to be nearly \$586,000 for operating and maintenance, including debt service payments. The Agency plans to utilize money in the capital fund to help cover this operating deficit until such time as wastewater rates can fully cover operating costs.

### CUSTOMER ACCOUNT, WATER USE, AND STRENGTH CHARACTERISTICS

The Agency provides wastewater services to 154 customers in the Martell area. This includes 71 single family residential accounts (72 dwelling units) and 83 commercial accounts<sup>1</sup>. In order to calculate wastewater rates it is necessary to consider the wastewater characteristics of these customers.

Generally, the first step in the development of customer wastewater characteristics is to examine water use in relation to wastewater treatment plant inflows. Winter water usage of all customers was provided by the Agency<sup>2</sup>. Wastewater flows from each user group were estimated based on data obtained for winter months of February and March. These months are used since irrigation is at a minimum and it is reasonable to assume that all water usage results in sewer flows. When winter usage is annualized the estimated total annual sewer flow is within about 14 percent of the measured annual sewer flow from Martell to the City of Sutter Creek's wastewater treatment plant. This comparison helps to validate the reasonableness of using winter water use as a basis for estimating sewer flows from each customer.

The quality of effluent from different customers varies. This is an important fact, as wastewater treatment costs are influenced not only by the volume of wastewater but also the quality of sewage produced. The quality parameters applicable to the Martell wastewater system include biochemical oxygen demand (BOD), and suspended solids (SS).

Published data are available on the typical strength of wastewater from different types of users. **Appendix B** summarizes the discharge loading characteristics of residential and various commercial users frequently served by a wastewater utility. Low, medium, and high strength categories have been defined for commercial users. This data is from published sampling compilations developed by the City of San Jose, East Bay MUD, Monterey Regional Water Pollution Control Agency, Sacramento Regional County Sanitation District, and the County Sanitation Districts of Los Angeles County. The State Water Resources Control Board (SWRCB), the overseer of wastewater rates for all U.S. Environmental Protection Agency grant funded agencies in the State, considers this data representative of most cities in California.

The proposed wastewater rates vary based on the strength characteristics of different types of users. Such a distinction is a requirement of the cost allocation methodology promulgated by the State Water Resources Control Board's *Revenue Program Guidelines*. It is recommended that the Agency utilize the following strength classifications for wastewater rate purposes in the Martell wastewater system:

❖ Residential	BOD = 200 mg/l	SS = 150 mg/l
❖ Low strength - Commercial	BOD = 200 mg/l	SS = 150 mg/l
❖ Medium strength - Commercial	BOD = 400 mg/l	SS = 300 mg/l

<sup>1</sup> This includes a mobile home park with 24 spaces, which is included as a commercial account for rate purposes.

<sup>2</sup> Some Martell wastewater customers are also water customers of the Agency. Others are water customers of the City of Jackson. The Agency periodically receives water usage data from the City for these customers.

❖ High strength - Commercial                      BOD = 800 mg/l                      SS = 600 mg/l

The City of Sutter Creek has limited data on the BOD and SS loading of wastewater from the Martell area and the total influent to their wastewater treatment plant. This data was used to help establish the wastewater treatment rate applicable to the Martell wastewater system from the City. The Agency and City should work jointly to gather additional data in order to more accurately and completely quantify the wastewater loading characteristics. Using the loading characteristics listed above, estimated BOD loading was found to be within about 16 percent of measured loads from the Martell area, and SS loading was found to be within about 38 percent. Actual suspended solids loading appears to be unusually low relative to standard factors. Even with the wide difference between actual and estimated SS loading, using the factors listed above is a reasonable approach for allocating a portion of treatment costs, as the relative difference between various customer classes is maintained.

**Exhibit 2**, on the following page, summarizes the estimated wastewater flows and loading for each customer class within the Martell wastewater system.

#### **DETERMINATION OF UNIT COSTS**

The second step in the cost allocation and rate setting process is to determine the unit costs of collection, treatment, and disposal. **Exhibit 3** summarizes how the \$534,000 annual revenue requirement for FY 09-10 is broken down to collection, treatment, and disposal categories. Collection system costs are allocated to both fixed components (based on capacity) and variable components (based on flow). Treatment costs are considered variable costs allocated based on flow, but also based on sewer strength since it costs more to treat higher strength sewage than lower strength sewage. Disposal costs are allocated entirely on the flow volume.

Costs in each category are then divided by the quantities developed in Exhibit 2 for flow, BOD loading, and SS loading to arrive at unit costs for each parameter. These unit costs are then used to allocated costs to various user classes, as described below.

**Exhibit 2  
Amador Water Agency -- Improvement District No. 12 (Martell)  
FY 09-10 Wastewater Rate Model  
Step 1 -- Identification of Users and Pollutant Levels**

No. of Accts	No. of EDUs	User Group	Wastewater Flow			BOD		SS	
			Winter Water Usage (CCF/mo)	Rate of Return	Sewer Flow (MG)	User BOD (mg/l)	Annual BOD Loading (lbs)	User SS (mg/l)	Annual SS Loading (lbs)
		<b>Residential</b>							
71	72	Single Family	395	100%	3.546	200	5,914	150	4,435
71	72	Sub-Total Residential	395		3.546		5,914		4,435
		<b>Commercial/Industrial</b>							
53	183	Low Strength	862	100%	7.733	200	12,898	150	9,674
17	169	Medium Strength	1,389	100%	12.468	400	41,592	300	31,194
13	143	High Strength	898	100%	8.056	800	53,749	600	40,312
83	495	Sub-Total Comm./Indus.	3,148		28.256		108,240		81,180
<b>154</b>	<b>567</b>	<b>TOTAL</b>	<b>3,543</b>		<b>31.802</b>	<b>430</b>	<b>114,154</b>	<b>323</b>	<b>85,615</b>

**Exhibit 3**  
**Amador Water Agency -- Improvement District No. 12 (Martell)**  
**FY 09-10 Wastewater Rate Model**  
**Step 2 -- Determination of Unit Costs**

Cost Category	Parameter Allocation Percentage	Annual Cost Allocated to Each Parameter	Total Quantities	Unit Cost for Each Parameter
Fixed Collection Costs	25%	\$ 123,000	567	\$ 216.93 per EDU
Variable Collection and Disposal Costs	32%	\$ 157,350	31.802	\$ 4,948 per MG
Variable Treatment Costs	43%	\$ 211,000		
Flow (MG)	34%	\$ 71,740	31.802	\$ 2,256 per MG
BOD (lbs)	33%	\$ 69,630	114,154	\$ 0.61 per lb
SS (lbs)	33%	\$ 69,630	85,615	\$ 0.81 per lb
<b>Total Revenue Requirement</b>		<b>\$ 491,350</b>		

#### ALLOCATION OF COSTS TO CUSTOMER CLASSES

The third step in the wastewater rate setting process is to allocate costs to each customer class based on the customer and usage characteristics of each class. This is accomplished by applying the unit costs developed in Exhibit 3 to the parameter quantities associated with each customer class. Exhibit 4 presents the allocation of costs to each customer class. For fixed collection system costs, unit costs are each multiplied by the number of EDUs associated with each customer class (from Exhibit 2). Variable collection and disposal unit costs are each multiplied by the annual flow volume associated with each customer class. Unit treatment costs for flow, BOD loading, and SS loading are each multiplied by flow and loading quantities associated with each customer class. The result of these calculations is the determination of the total annual revenue requirement allocated to each customer class, shown in the last column.

#### WASTEWATER RATE DESIGN

The final step in the wastewater rate setting process is to design rates for each customer class. The proposed wastewater rates include a fixed service charge plus a volumetric charge. Fixed costs are included in the service charge component and assigned to each customer based on EDUs, and variable costs are included in the volumetric component, which is based on flow volume. Volumetric rates also vary for each customer class based on specific strength characteristics associated with BOD and SS. Rate calculations are presented in Exhibit 5.

**Exhibit 4  
Amador Water Agency -- Improvement District No. 12 (Martell)  
FY 09-10 Wastewater Rate Model  
Step 3 -- Wastewater User Rate Calculation by Cost Component**

No. of Accts	User Group	Collection and Disposal Costs				Wastewater Treatment Costs						Total Annual Rev. Rqmt.
		Fixed Costs		Variable Costs		Variable Costs			Variable Costs			
		No. of Units (EDUs)	Collection Costs Unit Cost =	No. of Units (MG)	Variable Coll. & Disp. Costs Unit Cost =	No. of Units (MG)	Flow Costs Unit Cost =	No. of Units (lbs)	BOD Costs Unit Cost =	No. of Units (lbs)	SS Costs Unit Cost =	
71	Residential Single Family	72	\$ 15,619	3,546	\$ 17,543	3,546	\$ 7,998	5,914	\$ 3,607	4,435	\$ 3,607	48,374
71	Sub-Total Residential	72	\$ 15,619	3,546	\$ 17,543	3,546	\$ 7,998	5,914	\$ 3,607	4,435	\$ 3,607	48,374
53	Commercial/Industrial Low Strength	183	\$ 39,696	7,733	\$ 38,261	7,733	\$ 17,444	12,898	\$ 7,868	9,674	\$ 7,868	111,138
17	Medium Strength	169	\$ 36,661	12,468	\$ 61,688	12,468	\$ 28,125	41,592	\$ 25,370	31,194	\$ 25,370	177,214
13	High Strength	143	\$ 31,021	8,056	\$ 39,859	8,056	\$ 18,173	32,749	\$ 32,785	40,312	\$ 32,785	154,624
83	Sub-Total Comm./Indus.	495	\$ 107,381	28,256	\$ 139,807	28,256	\$ 63,742	108,240	\$ 66,023	81,180	\$ 66,023	442,976
<b>154</b>	<b>TOTAL</b>	<b>567</b>	<b>\$ 123,000</b>	<b>31,802</b>	<b>\$ 157,350</b>	<b>31,802</b>	<b>\$ 71,740</b>	<b>114,154</b>	<b>\$ 69,630</b>	<b>85,615</b>	<b>\$ 69,630</b>	<b>\$ 491,350</b>

**Exhibit 5**  
**Amador Water Agency -- Improvement District No. 12 (Martell)**  
**FY 09-10 Wastewater Rate Model**  
**Step 4 -- Final Wastewater User Rate Determination**

No. of Accts	No. of EDUs	User Group	Winter Water Usage (CCF/mo.)	User BOD (mg/l)	User SS (mg/l)	Fixed Charge (\$/EDU)	Variable Charge (\$/CCF)	Annual Revenue	Monthly Flat Rate
<b>Residential</b>									
71	72	Single Family	395	200	150	\$ 18.08	\$ 6.91	\$ 48,374	\$ 55.99 per DU
71	72	Sub-Total Residential	395					\$ 48,374	
<b>Commercial/Industrial</b>									
53	183	Low Strength	862	200	150	\$ 18.08	\$ 6.91	\$ 111,138	Calculated for each non-residential account based on assigned capacity (in EDUs) and winter water usage (in CCF/month)
17	169	Medium Strength	1,389	400	300	\$ 18.08	\$ 8.43	\$ 177,214	
13	143	High Strength	898	800	600	\$ 18.08	\$ 11.48	\$ 154,624	
83	495	Sub-Total Comm./Indus.	3,148					\$ 442,976	
<b>154</b>	<b>567</b>	<b>TOTAL</b>	<b>3,543</b>					<b>\$ 491,350</b>	

At present, all residential customers are charged a fixed flat rate for wastewater service. Proposed rates include a fixed monthly charge for single family residential customers. At present, a mobile home park is billed as a residential customer (with 24 dwelling units). It is recommended that this account be billed as a commercial account. This approach will likely be more equitable, as usage may vary with changes in occupancy. Single family customers use an average of 5.3 CCF/month during winter months. Each single family dwelling is assigned a capacity requirement of 1 EDU. The monthly charge for each residential dwelling is comprised of the fixed charge for 1 EDU and the volumetric charge based on average winter water use.

Under the proposed wastewater rates, commercial customers are also assigned a fixed charge based on assigned capacity (in EDUs) and a volumetric charge based on winter water usage. Each commercial account will have a fixed monthly charge, however, the amount is based on customer-specific capacity and usage information<sup>3</sup>. Commercial volumetric charges also vary for each strength category with a higher rate applicable to the higher strength categories. Commercial rates are also included in Exhibit 5.

### THREE-YEAR WASTEWATER RATE RECOMMENDATIONS

Wastewater rate calculations described in the preceding pages are based on the revenue requirement determined by the Agency for FY 09-10, as shown in the financial plan included in **Appendix A** of this report. The FY 09-10 revenue requirement is about 15 percent higher than current wastewater rate revenues. The Agency plans to adopt wastewater rates for a three-year period. The financial plan indicates a rate increases of 15 percent in both FY 10-11 and FY 11-12 will be required to meet financial objectives. **Exhibit 6** presents complete wastewater schedules for the next three years based on the financial plan requirements and the rate analyses presented herein.

With the change in the wastewater rate structure proposed for implementation in July 2009, customers will experience different changes in the amount of their wastewater bills. Some bills will increase more than others, and some will decrease. In all cases, however, the proposed wastewater rate will be fairer for all because the proposed rates improve how costs are allocated to each customer by reflecting each customer's capacity requirement, contribution to wastewater flows, and strength characteristics of the wastewater.

The proposed rates for July 2010 and July 2011 include no further rate structure changes. The 15 percent rate increases for each year proposed by Agency staff would be reflected equally in all rate components. Any changes in bill amounts (other than the 15 percent increase) beginning in both July 2010 and July 2011 would be due to a customer's change in winter water usage in the preceding winter (February and March).

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<sup>3</sup> The number of EDUs assigned to each customer is determined based on Agency regulations and considers past participation fees paid (i.e., capacity acquired), or historical usage (for accounts that pre-date the Agency's participation fees).

**Exhibit 6**  
**Amador Water Agency -- Improvement District No. 12 (Martell)**  
**Wastewater Rates**

	<u>July 2009</u>	<u>July 2010</u>	<u>July 2011</u>	
<b>Residential Wastewater Rates</b>				
Single Family Dwellings	\$ 55.99	\$ 64.39	\$ 74.05	per DU
<b>Commercial/Industrial Wastewater Rates (2)</b>				
Fixed Service Charge (3)				
All Non-Resid. Users	\$ 18.08	\$ 20.79	\$ 23.91	per EDU
Volumetric Charge (4)				
Low Strength Users	\$ 6.91	\$ 7.95	\$ 9.14	per CCF
Medium Strength Users	\$ 8.43	\$ 9.70	\$ 11.15	per CCF
High Strength Users	\$ 11.48	\$ 13.20	\$ 15.18	per CCF

**Notes:**

- (1) Current wastewater rates are based on number of equivalent dwelling units (EDUs). Single family dwellings are charged as 1 EDU.
- (2) Proposed monthly non-residential wastewater bills to be determined as the sum of a fixed service charge (based on EDUs) and a volumetric charge based on winter water usage (CCF = 100 cubic feet).
- (3) The number of EDUs of each account is determined based on the Agency's regulations.
- (4) Volumetric charge is based on average monthly water usage from February and March of each year.

**APPENDIX A - MARTELL WASTEWATER FINANCIAL PLAN**

(prepared by Agency staff)

Amador Water Agency - Martell Wastewater System Financial Plan Summary								
	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15
			15%	15%	15%	5%	4%	4%
<b>OPERATING FUND</b>								
<b>Beginning Balance</b>	\$ (8,375)	\$ (21,809)	\$ (103,414)	\$ (102,464)	\$ (84,764)	\$ 18,936	\$ 60,636	\$ 107,836
<b>Revenues and Transfers In</b>								
Wastewater Service Charges	\$ 443,910	\$ 427,280	\$ 491,350	\$ 565,000	\$ 650,000	\$ 683,000	\$ 710,000	\$ 738,000
Engineering & Inspection Fees	\$ 67,091	\$ 7,000	\$ 7,100	\$ 7,200	\$ 7,300	\$ 7,400	\$ 7,500	\$ 7,700
Interest - Operating	\$ 376	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 2,000
Other Operating Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
From Capital Fund-Reserves	\$ -	\$ 60,000	\$ 90,000	\$ 75,000	\$ 50,000	\$ -	\$ -	\$ -
<b>Total Revenues and Trans. In</b>	\$ 511,377	\$ 494,780	\$ 588,450	\$ 647,200	\$ 707,300	\$ 690,400	\$ 718,500	\$ 747,700
<b>Operating Expenditures</b>								
Salaries and Benefits	\$ 211,654	\$ 253,270	\$ 205,000	\$ 209,000	\$ 213,000	\$ 217,000	\$ 221,000	\$ 225,000
Sutter Creek & ARSA	\$ 186,994	\$ 207,000	\$ 288,000	\$ 302,000	\$ 308,000	\$ 314,000	\$ 320,000	\$ 326,000
System Operations & Maint.	\$ 65,260	\$ 55,910	\$ 57,000	\$ 58,000	\$ 59,000	\$ 60,000	\$ 61,000	\$ 62,000
Administrative Expend.	\$ 28,751	\$ 35,280	\$ 30,000	\$ 31,000	\$ 32,000	\$ 33,000	\$ 34,000	\$ 35,000
<b>Total Expenditures</b>	\$ 492,659	\$ 551,460	\$ 580,000	\$ 600,000	\$ 612,000	\$ 624,000	\$ 636,000	\$ 648,000
<b>Debt Service Payments</b>								
CSDA "Z" (Martell share only)	\$ 1,827	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Payment to Other Funds	\$ 7,597	\$ 7,185	\$ 4,000	\$ 4,500	\$ 4,600	\$ 4,700	\$ 4,800	\$ 4,900
<b>Total Debt Service Payments</b>	\$ 9,424	\$ 9,685	\$ 4,000	\$ 4,500	\$ 4,600	\$ 4,700	\$ 4,800	\$ 4,900
<b>Fixed Asset Purchases</b>								
Transfer to Other Funds	\$ 16,328	\$ 8,520	\$ 1,500	\$ 3,000	\$ 5,000	\$ 7,500	\$ 8,000	\$ 10,000
<b>Transfers to Other Funds</b>								
To Benefit Reserves	\$ 900	\$ 1,200	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500
To Operating Reserves	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 1,000	\$ 1,000	\$ 1,000
To Replacement Reserves	\$ 5,000	\$ 5,000	\$ -	\$ -	\$ -	\$ 10,000	\$ 20,000	\$ 30,000
<b>Total Transfers to Other Funds</b>	\$ 8,400	\$ 6,700	\$ 2,000	\$ 2,000	\$ 2,000	\$ 12,500	\$ 22,500	\$ 32,500
<b>Ending Balance</b>	\$ (21,809)	\$ (103,414)	\$ (102,464)	\$ (84,764)	\$ 18,936	\$ 60,636	\$ 107,836	\$ 160,136
Operating Reserve (16.7%)	\$ 82,000	\$ 92,000	\$ 97,000	\$ 100,000	\$ 102,000	\$ 104,000	\$ 106,000	\$ 108,000
Uncommitted Fund Balance	\$ (103,809)	\$ (195,414)	\$ (199,464)	\$ (184,764)	\$ (83,064)	\$ (43,364)	\$ 1,836	\$ 52,136
<b>CAPITAL FUND</b>								
<b>Beginning Balance</b>	\$ 1,550,547	\$ 1,474,099	\$ 826,719	\$ 773,219	\$ 734,719	\$ 671,419	\$ 672,819	\$ 690,319
<b>Revenues and Transfers In</b>								
Transfer in from Operations	\$ 5,000	\$ 5,000	\$ -	\$ -	\$ -	\$ 10,000	\$ 20,000	\$ 30,000
Participation Fees	\$ 151,724	\$ 90,000	\$ 20,000	\$ 21,000	\$ 22,000	\$ 23,000	\$ 24,000	\$ 25,000
Interest Earnings	\$ 43,067	\$ 15,000	\$ 16,500	\$ 15,500	\$ 14,700	\$ 13,400	\$ 13,500	\$ 13,800
Debt Proceeds	\$ -	\$ 82,210	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Revenues &amp; Trans. In</b>	\$ 199,791	\$ 192,210	\$ 36,500	\$ 36,500	\$ 36,700	\$ 46,400	\$ 57,500	\$ 68,800
<b>Expenditures</b>								
Capital Salaries & Overhead	\$ 111,792	\$ 50,675	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pay-As-You-Go Projects	\$ 164,447	\$ 728,915	\$ -	\$ -	\$ 50,000	\$ 45,000	\$ 40,000	\$ 40,000
Debt Financed Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transfer out to Operations	\$ -	\$ 60,000	\$ 90,000	\$ 75,000	\$ 50,000	\$ -	\$ -	\$ -
<b>Total Expenditures &amp; Trans. Out</b>	\$ 276,239	\$ 839,590	\$ 90,000	\$ 75,000	\$ 100,000	\$ 45,000	\$ 40,000	\$ 40,000
<b>Ending Balance</b>	\$ 1,474,099	\$ 826,719	\$ 773,219	\$ 734,719	\$ 671,419	\$ 672,819	\$ 690,319	\$ 719,119

## **APPENDIX B - SEWER STRENGTH CLASSIFICATIONS**

**Appendix B  
Amador Water Agency – Improvement District No 12 (Martell)  
Compilation of Published Data on Sewer User Strength Classifications**

User Classification Description	Proposed Strength (mg/l)			Percent of Single Family	Data Source
	BOD	SS	Weighted Average		
Strength Weighting Factor	50%	50%			
Residential	200	150	175	100%	SWRCB
<b>LOW STRENGTH CLASSICATION</b>					
Soft Water Service	3	55	29	17%	SWRCB
Office With Public Access	80	80	80	46%	SWRCB
Car Wash	20	150	85	49%	SWRCB
Veterinarian	130	80	105	60%	Los Angeles
Business Equipment Rental	130	80	105	60%	Los Angeles
Business Services -- Other	130	80	105	60%	Los Angeles
Office (Finance, Insurance, etc.)	130	80	105	60%	Los Angeles
Office (No Public Access)	130	80	105	60%	SWRCB
Office (Medical Services)	130	80	105	60%	Los Angeles
Personal Services (Other)	130	80	105	60%	Los Angeles
Photo & Portrait Studios	130	80	105	60%	Los Angeles
Manufacturing - Textile Mill Products	115	115	115	66%	Metcalf & Eddy
Schools	130	100	115	66%	SWRCB
Laundromat-Public	150	110	130	74%	SWRCB
Landscaping Services	150	150	150	86%	Los Angeles
Amusement & Recreation: Indoor & Out	150	150	150	86%	Los Angeles
Auto Parking	150	150	150	86%	Los Angeles
Barber Shop	150	150	150	86%	Los Angeles
Beauty Shop	150	150	150	86%	Los Angeles
Church (No Kitchen)	150	150	150	86%	Los Angeles
Community Center (No Kitchen)	150	150	150	86%	Los Angeles
Grocery Market (No Butcher or Baker)	150	150	150	86%	Los Angeles
Health Spa	150	150	150	86%	Los Angeles
Kennel	150	150	150	86%	Los Angeles
Malls/Dept. Stores (No Food Svcs)	150	150	150	86%	SWRCB
Manufacturing (Other)	150	150	150	86%	Los Angeles
Manufacturing (Apparel & Other Textiles)	150	150	150	86%	Los Angeles
Manufacturing (Furniture)	150	150	150	86%	Los Angeles
Membership Organizations	150	150	150	86%	Los Angeles
Museum/ Art Gallery	150	150	150	86%	Los Angeles
Nursery/Greenhouse	150	150	150	86%	Los Angeles
Office (Construction)	150	150	150	86%	Los Angeles
Massage Parlor	150	150	150	86%	Los Angeles
Retail Apparel and Accessory Store	150	150	150	86%	Los Angeles
Retail Bldg. (Materials & Gardening)	150	150	150	86%	Los Angeles
Retail (Packaged) Food (No Sewer Disposal)	150	150	150	86%	Los Angeles
Retail Furniture & Home Furnishings	150	150	150	86%	LACSD
General Merchandise -- Retail/ Wholesale	150	150	150	86%	SWRCB
Retail Trade -- Misc. (Except Food/Drink)	150	150	150	86%	SWRCB
Storage, Warehouse & Outdoor	150	150	150	86%	Los Angeles
Studio/Recording Sound Stage	150	150	150	86%	Los Angeles
Theater/Auditorium (No Food)	150	150	150	86%	Los Angeles
Convalescent Homes	250	100	175	100%	SWRCB
Hospital	250	100	175	100%	SWRCB
Other Health Services	250	100	175	100%	SWRCB
Transp. & Utilities (SIC 400 through 489)	200	150	175	100%	Metcalf & Eddy
Agricultural Production	150	250	200	114%	Metcalf & Eddy
Agricultural Services - Other	250	150	200	114%	Metcalf & Eddy
Bar Without Restaurant	200	200	200	114%	SWRCB
Restaurant -- Preprocessed Only	200	200	200	114%	Los Angeles
Social Services	200	200	200	114%	SWRCB

**Appendix B -- Continued  
Amador Water Agency -- Improvement District No 12 (Martell)  
Compilation of Published Data on Sewer User Strength Classifications**

User Classification Description	Proposed Strength (mg/l)			Percent of Single Family	Data Source
	BOD	SS	Weighted Average		
<b>MEDIUM STRENGTH CLASSIFICATION</b>					
Hotel (No Restaurant)	310	120	215	123%	SWRCB
Prison With Food Service	310	120	215	123%	Los Angeles
Auto Repair (No Steam Cleaning)	180	280	230	131%	SWRCB
Auto Service Station (No Steam Cleaning)	180	280	230	131%	SWRCB
Agricultural Services -- Animal	350	150	250	143%	Metcalf & Eddy
Auto/Vehicle Sales	300	200	250	143%	Metcalf & Eddy
Repair Services -- Misc.	250	250	250	143%	Metcalf & Eddy
Manufacturing -- Rubber/Plastic Products	200	350	275	157%	Metcalf & Eddy
Manufacturing -- Electric/Electronic Equipment	300	350	325	186%	Metcalf & Eddy
Manufacturing - Instruments	300	350	325	186%	Metcalf & Eddy
Manufacturing -- Fabricated Metal Products	300	350	325	186%	Metcalf & Eddy
Manufacturing -- Transport Equipment	400	250	325	186%	Metcalf & Eddy
Laundromat, Commercial	450	240	345	197%	SWRCB
Transportation -- Bus/Air Terminal	350	350	350	200%	Metcalf & Eddy
Malls/Shopping (Including Food Sales)	400	400	400	229%	Los Angeles
Manufacturing -- Machine Shops	290	550	420	240%	Los Angeles
Manufacturing -- Metal Industry	290	550	420	240%	Los Angeles
Manufacturing -- Lumber & Wood Products	431	431	431	246%	Los Angeles
Manufacturing -- Stone, Clay, Glass Products	200	700	450	257%	Metcalf & Eddy
Reproduction/Mailing Service	500	400	450	257%	Metcalf & Eddy
Hotel (With Restaurant)	500	600	550	314%	SWRCB
Manufacturing -- Paper/Containers	700	500	600	343%	Metcalf & Eddy
Manufacturing -- Printing & Publishing	700	500	600	343%	Metcalf & Eddy
Laundry (Industrial)	670	680	675	338%	SWRCB
<b>HIGH STRENGTH CLASSIFICATION</b>					
Agricultural Production - Livestock	1,200	350	775	443%	Metcalf & Eddy
Mortuary	800	800	800	457%	SWRCB
Grocery (w/Butcher or Baker)	800	800	800	457%	SWRCB
Manufacturing -- Baked Foods	1,000	600	800	457%	SWRCB
Restaurant/Bar (W/Food Preparation)	1,000	600	800	457%	SWRCB
Manufacturing -- Beverages	1,500	300	900	514%	Metcalf & Eddy
Manufacturing -- Paint	1,300	1,100	1,200	686%	Metcalf & Eddy
Manufacturing -- Other Chemical Products	1,300	1,100	1,200	686%	Metcalf & Eddy
Manufacturing -- Dairy Products	2,369	922	1,646	940%	Los Angeles
Steam Cleaning -- Auto	1,150	2,150	1,650	943%	SWRCB
Manufacturing -- Other Food Products	2,213	1,453	1,833	1047%	Los Angeles
Septage	5,400	12,000	8,700	4971%	SWRCB