

EXHIBIT 18-A



MONTEREY PENINSULA  
WATER MANAGEMENT DISTRICT  
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PERMIT APPLICATION TO CREATE NEW or AMEND EXISTING  
WATER DISTRIBUTION SYSTEM (Revised July 28, 2009)

Office Use Only

Pre-Application Name/Date	
Application ID Number	20090709RAN
Date Application Accepted	JUN 7, 2009 - Revised July 28, 2009
Date Application Deemed Complete	August 7, 2009

**FEE AMOUNT-** The application fee must be paid concurrently with permit application. The fee amount varies depending upon the level of review required:

- Level 2 Permit Fee: \$2,100 for up to 30 hours of staff time
- Level 3 or Level 4 Permit Fee: \$2,800 for up to 40 hours staff time

**FEE RULES-** For more complex projects where staff time exceeds the number of pre-paid hours of staff time, a fee of \$70 per hour will be charged. See Rule 60 for complete fee information.

**CONFIRMATION OF PERMIT REVIEW LEVEL -** The permit review level required for this application is based upon a preliminary evaluation of basic information provided in the Pre-Application Form. During the review of this application, staff will confirm the review level. If it is determined that a higher or lower level of review is required, the applicant will be notified, and the higher or lower fee will be required or refunded.

SECTION 1 -- APPLICANT INFORMATION

- 1. Name of System: Rancho del Robledo WDS
- 2. Assessor's Parcel Number(s) in System 197-151-003, 4, 5, 6, 7, 8, 9, 10, 11, 16 and 17
- 3. System Street Address/Area Off 285 Esquiline Road, Carmel Valley, CA 93924
- 4. Name of Applicant George S. Lockwood  
*(If the applicant is not the system owner or operator, the form must also be signed by the system owner or operator.)*
- 5. Mailing Address PO Box 345, Carmel Valley, CA 93924
- 6. Contact Numbers (ph/fax/e-mail) 831-659-4145 georgeslockwood@aol.com
- 7. Agent (if any) N/A \_\_\_\_\_
- 8. Agent Mailing Address N/A \_\_\_\_\_
- 9. Agent Contact Numbers (ph/fax/e-mail) N/A \_\_\_\_\_

**SECTION 2 -- WATER DISTRIBUTION SYSTEM INFORMATION**

*NOTE: Please attach additional pages, if necessary, to complete each question.*

**10. Attach Map** (8 1/2 x 11 or larger): Show the parcels to be served and the approximate location of the wells(s), easements and/or water supply facilities. See Exhibits 1.

**11. Water Source Information.** Complete the table below by describing both the existing and proposed water source(s) to supply the proposed water system:

<b>Source and System Information</b>	<b>Existing (list/describe)</b>	<b>Proposed (list/describe)</b>
A. Water Source (groundwater, surface water, reclaimed, desalination, etc.)	Well and groundwater	Same
B. Cal-Am water service (is parcel in service area? Has active service?)	Cal-Am active service to APNs 05, 06, 07, 08 and 09, with standby service to APN 16, and emergency supply for APN 11. See Exhibit 4 "Commentary."	Same
C. Total number of wells with MPWMD and County permits	One well in continuous use since 1939	Same
D. Water system infrastructure (list major system components, e.g.; tanks, treatment, backflow, meters, etc.)	See Exhibit 4 "Commentary"	Same

Other relevant information, comments or expansion on answers above: See Exhibit 4.

**12. Interties and Emergency Supply.** Please check appropriate box for items A through F below. For all "yes" responses use the space provided to describe the item and list associated attachments, if any.

- A. Is there an emergency water supply in case of system failure?  Yes  No  N/A
- B. Will the system intertie to any other water distribution system?  Yes  No  N/A
- C. Has the other water system approved the intertie?  Yes  No  N/A
- D. Has a backflow device to prevent cross-contamination been installed?  Yes  No  N/A
- E. Must the local Fire Department approve this water system?  Yes  No  N/A
- F. What is the source of water for Fire Protection? Fire hydrants supplied with Cal-Am water.

Description of "yes" responses: APNs 05, 06, 07, 08 and 09 have active Cal-Am service for domestic purposes. APN 11 is interconnected with Cal-Am for emergency supply through an approved backflow prevention device. Cal-Am service is through 6-inch water mains. APN 04, 10 and 16 will not have emergency backup connections with Cal-Am and will rely upon water trucked from other sources.

**13. Water Rights Information.** For systems utilizing wells located within the Carmel Valley Alluvial Aquifer (CVAA), applicants are encouraged, but not required, to obtain a "Water Rights Confirmation" letter from the District prior to the submittal of this application. For systems utilizing wells outside the CVAA, complete item "A" only. See Exhibit 2.

A. Water Rights Outside of CVAA. Attach a copy of the deed showing ownership of property (overlying rights to percolating groundwater is assumed).

B. If within CVAA, has a "Water Rights Confirmation Letter" been issued by the District?  Yes  No  N/A

If "Yes," state date of letter and attach a copy to this application. April 22, 2009 Exhibit 2.

If "No," complete questions C, D and E below. N/A

**14. Water Quality Information.** For wells that will provide potable (drinking) water to one or more connections, water quality information is required prior to further processing of this application.

- Irrigation/agricultural use only (non-potable use only). *No water quality analysis required.*
- 1 connection- Please attach water quality test results for "general mineral, general physical, inorganics" + coliform (described in Title 22, Chapter 15)
- 2+ connections- Please attach water quality test results as required by Monterey Co. Health. See Exhibit 3.

**15. Water Use.** Complete the table below by describing both the existing and proposed uses of *well* water to be served by the proposed water system. Water supplied by Cal-Am is not included.

Use and Demand Information	Existing (list/describe)	Proposed (list/describe)
<b>A. Residential service</b> (potable, drinking water); includes standard landscaping.  List all separate structures/units served and if they include kitchen.)	Main house on APN 11 plus separate pool house structure with kitchen. House on APN 10 with kitchen.  Landscaping for APNs 03, 04, 05, 06, 07, 08, 09, 10, and 11.	Additional residential Service to APN 04 and APN 16, with kitchens.
<b>B. Commercial service</b> (potable, drinking water; # of non-fire meters)	None	None
<b>C. Industrial service</b> (potable or non-potable; # of non-fire meters)	None	None
<b>D. Total number of structures served</b>	Three (see A above)	Five – APNs 04, 10, 11 (with two houses), plus 16
<b>E. Addl. Landscaping</b> (non-potable)		
<b>F. Pool or Pond</b> (non-potable)	1,000 Sq. ft.	No new pools expected
<b>G. Irrigation/agriculture</b> (non-potable) Describe crop(s) and other agric.	None at present	No additional expected
<b>H. Live-stock</b> (non-potable)	Two horses on parcel 3	No additional expected
<b>I. Other</b>		
<b>J. Total number of parcels served</b>	2 potable with 7 irrigation only	4 potable (APN's 04, 10, 11 and 16), plus irrigation only (APNs 03, 05, 06, 07, 08 and 09).
<b>K. Total acreage served</b> (all parcels)	24.3 acres	26.3 acres
<b>L. Estimated water use</b> (well only).	14.74 acre-feet per year	<del>14.30</del> 14.57 acre-feet per year
<b>Other relevant information</b> , comments or expansion on answers above (you may add extra sheets): See reports attached as Exhibits 4 and 5.		correction HB 7/29/09

**16. Well Source and Pumping Impact Assessments.** Most systems using groundwater wells will be required to submit a *Well Source and Pumping Impact Assessment* with this formal application. Please complete the items below to confirm the name and contents of the Assessments.

- Title, date, and preparer's name of Assessment: This well has been in continuous operation since at least as early as 1939. There are no records of its completion.
  - The following required items are typically included within all Assessments. Please check all boxes to confirm that the items have been included either in the Assessment or as separate attachments to this application.
  - Well logs (State DWR "Well Completion Report"). Not available.
  - Results of well capacity/pumping tests (*Hydrologist should follow MPWMD procedures*). This well currently pumps 43 gallons per minute. Until approximately 2004, it pumped 75 gpm. Never been dry
  - Copy of approved Well Construction Permit from Monterey County Health Department. None
  - Pump horsepower, pump make, pump type. 5 HP submersible Jacuzzi pump with Franklin motor.
  - Water quality analysis (for potable uses only) See Exhibit 3.
- Comments: This well has been in continuous use since at least as early as 1939. The current pump and motor were installed in 2004.

**17. Reliability of Supply (Non-Well).** For sources of supply other than groundwater wells, describe water source and production facilities, including reliable yield and water quality testing performed. Attach and list associated information, if any. NA

**18. Land Use/CEQA Information.** Please complete all applicable items below.

- A. Zoning and land-use designations for parcels served (available from Monterey County or City). LDR/B-6-D-S. Single family residential.
- B. Permits and approvals required or received from other agencies (e.g., Planning Department, Building Department, Health Department, Coastal Commission, CPUC). Include file numbers and resolution numbers used by the agencies. Health department permit for serving more than one parcel.
- C. Recent or pending subdivisions to be served by the proposed water system. Include file numbers and resolution numbers used by the agencies. Rancho del Robledo subdivision was approved and recorded in 1972.
- D. Environmental documents prepared by jurisdiction or other lead agency. An environmental impact report for this subdivision was submitted to the Monterey County Planning Department in 1972.
- E. Status of lead agency CEQA actions. Provide date of formal action (e.g., Notice of Determination, Neg. Dec., EIR, etc.) Include agency file numbers and resolution numbers. There have not been any actions since the time of the subdivision.

**19. MPWMD Permits**

Describe and list **previous MPWMD permits received**, if any, including permit number and date issued. Include existing well meter information, if applicable. Rancho del Robledo WDS January 22, 2001. See Exhibit 5.

**20. List unique issues, considerations and/or special conditions**, if any, which may pertain to the proposed water system. This well has been in continuous service since 1939 and has never been dry. The pumping demand under this amended permit will be reduced. A pumping impact assessment is unnecessary.



# Supplemental Questionnaire for Water Distribution System Application

SYSTEM NAME: Rancho del Robledo WDS APN: 197-151-003, 4, 5, 6, 7, 8, 9, 10, 11, 16 and 17

NOTE: Attach additional pages, if necessary, to complete each question.  
An electronic version of expanded answers may be requested.

S1. Does this request rely upon an "Environmental Document", as per the California Environmental Quality Act (CEQA)? If so, please specify the type of Environmental Document that was prepared (or will be prepared) and provide details regarding its preparation (e.g. notice of preparation, notice of completion, and any public hearing dates). Indicate CEQA lead agency.

No. An Environmental Impact Statement was provided to the Monterey County Planning Department in 1972.

S2. Has any new information regarding the proposed project, its environmental impacts, the severity of those impacts, mitigations for those impacts, or alternatives become available since the lead agency reviewed the project?

No.

S3. Will this request have any significant effects on the environment based upon the Environmental Document or other information? If so, describe the effects and the mitigations, if any, that are proposed to minimize those effects.

No.

S4. Is the source of supply shared by any other water distribution system? Would the addition of the proposed production result in an adverse cumulative impact on the environment?

The source is the Carmel River aquifer that is also the source for Cal-Am. There would be no adverse cumulative impact on the environment with the amended water distribution permit. Total water production will be reduced.

S5. Does this request rely on any specific hydrologic, geologic, or other technical study? If so, state the name of the study, the date it was finalized, and the principal author or authors. Attach a copy of each study cited.

No.

S6. Have there been any studies done to determine if an alternative water supply is economically feasible and physically available? If so, please describe the alternatives that were identified and the reasons why they were rejected.

The only alternative water supply would be the California American Water Company that is unable to provide additional water to this area.

S7. Will the request cause any possible duplication of service with an existing water distribution system? Explain why the duplication of service is necessary.

Cal-Am is unable to supply water, so there is no duplication.

S8. Will the request result in either exportation of water outside of or importation of water into the Monterey Peninsula Water Management District? If so, please specify the quantities that would be either exported or imported.

No.

S9. Will the request create or increase an overdraft of ground water, or cause a degradation in water quality due to sea-water intrusion or some other type of contamination?

No. There will be a net reduction in water production.

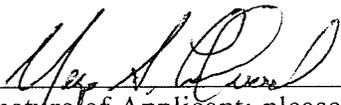
S10. Will this request adversely affect the ability of existing water distribution systems and individual users to produce water?

No. There will be a net reduction in water production.

S11. If the request is for an annexation of new territory into an existing water distribution system service area, is the property to be annexed surrounded by, or adjacent to other properties in the service area?

It is requested that APN 197-151-016 be annexed to the existing WDS. This parcel is an integral part of the Rancho del Robledo subdivision that was recorded in 1972.

I declare under penalty of perjury that the information in this questionnaire and on accompanying attachments is correct to the best of my knowledge and belief.

  
\_\_\_\_\_  
Signature of Applicant; please print name below

July 28, 2009, Carmel Valley, Ca  
Date/Location

George S. Lockwood

*Note: The applicant may submit written Findings, with evidence for each Finding, for District Board consideration; please contact MPWMD staff re: proper format.*

**Analysis of Rancho del Robledo Water System**  
(Revised July 28, 2009)

The purpose of this analysis is to support a Permit Application by George and Marcia Lockwood to Amend an Existing Water Distribution System (WDS) authorized by the Monterey Peninsula Water Management District (MPWDS) for the Rancho del Robledo Water Distribution System in a letter on January 22, 2001. This letter permit is attached as Enclosure 2.

A copy of the Monterey County Assessor's Map for this subdivision is also attached. In this revised analysis, lots may be designated by the last three digits of their Assessor Parcel Numbers (APNs) that are circled and highlighted on the map. The other single or double digit numbers shown on the map within each parcel are subdivision lot numbers and are not referenced in this report.

At present, lots with APNs 197-151-003, 197-151-004, 197-151-005, 197-151-006, 197-151-007, 197-151-008, 197-151-009, and 197-151-010 are permitted for landscape irrigation purposes under the existing WDS permit, with APN 197-151-011 permitted for irrigation and domestic uses. APN 17 is the well site.

Cal-Am provides active service for water for domestic purposes to APNs 197-151-005, 197-151-006, 197-151-007, 197-151-008 and 197-151-009. APN 197-151-011 has a backup connection for emergency supply with Cal-Am.

At this time there is no active service for APN 197-151-016 from either Cal-Am or under the WDS. One requested amendment to the WDS permit is to annex APN 016 to the WDS in order to provide active service for domestic and irrigation purposes to this parcel. Amendments are also sought to allow service of domestic water for APN 004 and 010 that now are permitted for irrigation purposes. For many years, APN 010 has been provided water for domestic purposes from APN 011.

For purposes of the Application and in this engineering analysis:

*“active service”* describes parcels consuming water from CalAm for domestic and landscaping purposes on a regular basis;

*“standby service”* means that the parcel has a connection to CalAm with an installed water meter, but no water has ever been consumed through that connection (*e.g.*, APN 016); and

*“emergency supply”* means there is a metered connection to CalAm with a back-flow prevention device that is used only in the event of a pump failure or other cause of well water not being available (*e.g.*, APN 011).

A schematic drawing of this water system is included on the Assessor's Map. The parcels to be included in the amended water distribution system are highlighted in yellow.

Applicant seeks to have APN 004 permitted for both domestic and irrigation water use so that a dwelling can be built upon it, with APN 016 permitted for both domestic and irrigation uses so that a dwelling also can be constructed it, and APN 010 permitted for domestic as well as irrigation water.

In order for MPWMD to allow these amendments, the applicants must demonstrate that total water consumption from both the well and from Cal-Am to the parcels in this system must not increase. It is projected that the addition of APN 004 and APN 016 will increase water usage by a total of 1.0 acre-feet per year. Therefore, water savings of at least this amount must be demonstrated.

This analysis describes the water supply and distribution system at the Rancho del Robledo subdivision; historic water consumption for both the on-site well and from Cal-Am for those parcels connected to the private water distribution system owned by George and Marcia Lockwood; trends in total water consumption; testing for leaks before undertaking repairs; location and repairs of leaks; and testing the system after leaks were repaired.

In summary, repairs of leaks in the Rancho del Robledo water distribution system over the past two months are saving 2.42 acre feet of water per year. An additional 0.19 acre-feet of water savings has been demonstrated over the past four years from the 8-year average by reduced consumption for domestic purposes of those parcels served by Cal-Am. In total, 2.61 acre-feet per year of water savings has been effected in this system. This water saving is substantially greater than will be consumed with the construction of two new dwellings.

### **The System**

The Rancho del Robledo water system consists of a well that currently produces 43 gallons per minute located near the Carmel River on APN 017 "Well Lot." The river flows through a portion of this lot. A water meter and check valve are located at the well. This well has been in continuous operation since at least as early as 1939. In 2004, a turbine pump that produced 75 gallons per minute was replaced with a submersible pump now producing 43 gallons per minute. The head of water at the pump is approximately 150 psi.

Water from this well is delivered to a 10,000 gallon concrete water tank located at the southeastern corner of APN 011. This tank was constructed in 1990 to replace the original redwood tank built in 1939 that leaked excessively.

The water tank is supplied from the pump through approximately 1,000 feet of 3-inch pipe. Some of these sections are the original iron pipe, while most are PVC pipes that were installed in 1972. These pipes cross APNs 016, 015, and 014 through easements. In this analysis this section of pipe is referred to as Zone 1.

The water flows from the tank through approximately 600 feet of 3-inch iron pipe to the house located on APN 011. This is the original pipe installed in 1939 or earlier. There is a ball valve at the discharge of the water tank that was installed in 1990. Before serving the house, there is a 3-inch gate valve that is part of the original plumbing. The 600-foot long section between the valve at the discharge of the water tank and the next valve at the house lot (APN 011) is Zone 2.

The original house on APN 011, which was built in 1939, has been continuously served from this system. It is Zone 3 and consists of a main house, a swimming pool, and a second pool house with kitchen. There are lawns and landscaping on this parcel. Water

pressure at the structures in Zone 3 is 45-48 psi depending upon location within the parcel.

APN 010 is served through a ¾-inch pipe from a connection at the pool house on APN 011. The house on APN 010 is thought to pre-date 1900. When the main house was built in 1939, the old house on APN 10 was connected to the main water supply system and has been continuously served from the well. This is Zone 4. There is a gate valve controlling this zone at the pool house near the northwestern corner of APN 011 near the intersection of APN 010 and 012.

Irrigation water service to APNs 003, 004, 005, 006, 007, 008 and 009 is from an iron 3-inch pipe beginning at the 3-inch gate valve on APN 011 to an intersection at approximately the corner of APNs 003, 007 and 008. From that point, 3-inch PVC pipe runs along the westerly lines of APNs 006, 007, 008, 009 and 010 for a total of approximately 750 feet. This is Zone 5. There is a 3-inch gate valve at the corner of APNs 011, 007, and 008 controlling water in this zone.

Cal-Am service to APN 011 is from the 6-inch main along the road in APN 012. There is a backflow preventer at the Cal-Am service connection. This service is rarely used and is for backup purposes only as an emergency supply.

### **Water Consumption History**

According to Monterey Peninsula Water Management District records provided as Enclosure 1, the total annual amount of water produced from the well over the past five years has been:

October 1, 2007 through September 30, 2008	16.19 acre-feet
October 1, 2006 through September 30, 2007	15.98 acre-feet
October 1, 2005 through September 30, 2006	14.19 acre-feet
October 1, 2004 through September 30, 2005	12.46 acre-feet
October 1, 2003 through September 30, 2004	14.89 acre-feet

The annual average for the past five years is 14.74 acre-feet. This average is consistent with prior years. Several earlier years data are missing due to a faulty water meter that was replaced in early 2003.

Using electric power consumption records for this well pump motor, the total calculated amount of water pumped over the past eight years, beginning October 1, 2000, has been:

October 1, 2007 through September 30, 2008	15.21 acre-feet
October 1, 2006 through September 30, 2007	15.46 acre-feet
October 1, 2005 through September 30, 2006	13.65 acre-feet
October 1, 2004 through September 30, 2005	13.57 acre-feet
October 1, 2003 through September 30, 2004	15.67 acre-feet
October 1, 2002 through September 30, 2003	14.12 acre-feet
October 1, 2001 through September 30, 2002	15.43 acre-feet
October 1, 2000 through September 30, 2001	15.98 acre-feet

By this method, the annual average for the past eight years has been 14.89 acre-feet, essentially the same as the water meter readings.

In addition to well water production, records have been acquired from Cal-Am for annual consumption of water obtained from Cal-Am for APNs 005, 006, 007, 008, and 009. This is summarized for each calendar year:

2008	0.79	acre-feet
2007	0.85	acre-feet
2006	0.92	acre-feet
2005	1.03	acre-feet
2004	1.00	acre-feet
2003	1.19	acre-feet
2002	1.08	acre-feet
2001	1.00	acre-feet

It is important to note that there is no recorded consumption of Cal-Am water for APN 011 since this connection and meter is for emergency supply only, nor for APN 016 since this connection and meter are dormant without water consumption.

The eight year annual average consumption of water provided by Cal-Am to the subject lots is 0.98 acre-feet.

Adding the eight year average well water production of 14.74 acre-feet from the meter to the 0.98 acre-feet provided by Cal-Am, the total annual water usage for the subject parcels averages 15.72 acre-feet. Please note that in the Application, question 11. B Water Source Information, is limited to Cal-Am.

### **Trends of Reduced Water Consumption**

It is important to observe that from the year 2005 through 2008, water consumption from Cal-Am for domestic purposes declined each year for a total of 0.24 acre-feet per year. This represents an approximate 25% reduction in consumption of Cal-Am water. This is due to the installation of reduced water consumption appliances and fixtures, coupled with other water conservation efforts by individual families in this subdivision. This is a decrease of 0.19 acre-feet from the eight year average. It is also a 0.40 acre-foot decrease from the peak in 2003.

This sizable reduction in consumption is a result of water conservation measures employed by the residents of these parcels.

### **Leakage Amounts before Repairs**

Extensive testing was conducted to determine amounts of leakage from the water distribution system. The well pump is controlled by a float switch in the water tank. As the tank fills, when the water reaches a preset level, the switch opens and pumping stops. Before each test, the tank was filled to the preset water level. The amount of water necessary to fill the water tank was measured by the water meter installed at the well.

Various zones and combinations were tested in isolation. For example, Zones 1 and 2 are the pipes connecting the pump with the water tank and then from the tank to the

valve at the house on APN 011. These two zones were tested with the tank discharge valve closed for a period of time, usually several hours. At the termination of each test, the amount of water required to fill the tank, as measured by the water meter at the well, was determined. This is the amount of water that leaked during that time period in these two zones, proving a leakage rate in gallons per minute.

Similar tests were conducted with Zones 1, 2 and 3, Zones 1, 2, 3 and 4, and Zones 1, 2, 3, 4 and 5.

In the case of Zone 1 alone, the number of seconds required for water to discharge from the inlet pipe after the pump motor was energized provide the quantity of water that leaked over that time period of a test.

In addition, Zones 3, Zones 3 and 4, and Zones 3, 4 and 5 were tested using the Cal-Am service to APN 011.

By visual examination, it was determined that a major leak was located near the discharge valve for the water tank in Zone 2. This was at a fitting in PVC pipe that was not welded when the tank was installed in 1990. Testing before repair determined a 1.85 gallons per minute leakage in Zones 1 and 2, with leaks of 2.30 gpm in Zones 1, 2, 3 and 4. The leak near the tank discharge valve was obviously a major leak.

The leakage rate for the *entire system* was measured at 2.69 gpm or 4.4 acre-feet per year. Of this total, 2.42 acre-feet is now being saved from repairs of these leaks.

### **Repairs and Subsequent Leakage**

The leak at the discharge valve of the water tank was repaired by solvent welding the pipe and fitting. Leaking at this point stopped.

Another major leak was found in a 2-inch iron pipe that is a fire hose riser on APN 11. When the main house was constructed in 1939, fire protection was provided at three points around the house served by 2-inch iron pipes with 1½-inch fire hose connections. One of these pipes was badly corroded just below the ground and was leaking considerable amounts of water. This riser was replaced.

Further investigations revealed that a garden hose bib at the house on APN 011 badly leaked. It was replaced. Another leak was detected in a gate valve for an abandoned landscape irrigation system. That valve was removed and capped. Another three hose bibs that were leaking were replaced.

It was also detected that in the pool house, a shower valve was leaking requiring the entire shower valve assembly to be replaced. Another two leaking sink valves in the pool house were repaired.

In all, 10 leaks were found and repaired. The leakage rate in Zones 1, 2, 3 and 4 was reduced from 2.30 gpm to 0.80 gpm, a decrease of 1.50 gpm. This amounts to 2.42 acre-feet per year of water saved annually by repairing these leaks.

### **Effects of Water Conservation**

Most of these repairs were accomplished in April and May of this year. May is the beginning of the summer irrigation season. The consumption of electric power for the

pump motor during this past May was 82% of the ten year average for that month. Using the *electric consumption method*, accumulative water consumption during the first five months through May of this year is 0.62 acre-feet. This amount, extrapolated for the entire 12 months, provides an expected saving of 2.32 acre-feet of water. This savings estimate is very close to the savings being realized from leak repairs.

### Commentary on Application

In paragraph 11. B, the existing Cal-Am service structure will not be changed

Under 11. Other relevant information: The water well is located on APN 017. Water is pumped through 3-inch pipes in easements from APN 017 through APNs 016, 014 and 015 to a 10,000 gallon tank near the southeastern corner of APN 011. Water flows from the tank through 3-inch pipes in APN 011 and along the boarder of APNs 007 and 008, and then along the boundary of APN 003 (“Equestrian Lot”) and each of APNs 003 through 010. It is proposed that APN 004 be fed through a new easement across APN 3. See Exhibit I (Assessor’s map with drawing of water system).

There is a water meter and check valve located at the discharge of the pump in APN 017. There is a backflow prevention device at the Cal-Am meter serving APN 011.

15. L. Estimated water use (well only). The historic 5-year metered production from the existing well has been 14.74 acre-feet of water per year. Over the past several months, leaks have been repaired that will save 2.42 acre-feet of water per year. It is reasonably expected that 1.25 acre-feet will be used for irrigation of the large pasture that is APN 003. This will result in a net savings of 1.17 acre-feet of water annually, with a total expected consumption of well water of 13.57 acre-feet of well water per year.

A summary of these calculation is:

Past 5-year historic water use	14. <sup>74</sup> <del>47</del> acre-feet per year	correction 7/29/09 AS
Savings from leak repairs	- 2.42	
Additional water for APNs 004 and 016	1.00	
Irrigation of pasture (APN 003)	<u>1.25</u>	
Estimated future water use	<del>14.30</del> 14.57	✓

### Summary

Repairs of leaks in the Rancho del Robledo water distribution system will save 2.42 acre-feet of water per year, beginning in 2009. An estimated 0.50 acre-feet of water to serve APN 004 plus and estimated 0.50 acre-feet additional for APN 016, plus and estimated 1.25 acre-feet for APN 003, will provide a net water consumption of 14.30 acre-feet per year from the existing well once the new parcels are developed.

An additional 0.19 acre-feet of water savings has been demonstrated over the past three years by reduced consumption for domestic purposes of those parcels served by Cal-Am. In total, 2.61 acre-feet of water savings per annum have been effected in this system.

This total water saving is substantially greater than will be consumed by the construction of two new dwellings and the pasture area.

George S. Lockwood  
June 26, 2009  
Revised July 28, 2009