

October 30, 2008

Dear Raspberry Falls Residents:

Thank you for the excellent turnout at the water system update meeting we held this past week at Lockett's Community Center. If you were unable to attend, this packet is for you. I have included all the handouts and a brief synopsis of our discussion. If you have any questions or comments about any of this, please do not hesitate to contact me. I am in the process of posting all items to our website, and loading all questions and answers that have been asked since the April, 2008 time frame.

Quality Background

In April of this year, upon routine sampling and analysis of your raw water (the water from your well prior to disinfection with chlorine), we discovered a pronounced jump in total coliform. Total coliform is a group of bacteria found virtually everywhere. We use it as a measurement to detect the risk level for E. coli and more harmful contaminants in the water. The sampling had occurred soon after a significant rain event. The count in this sample was high enough to suggest that surface water was possibly getting into your well. Your drinking water was continuously disinfected with chlorine and at no time were you at risk. Following the Virginia Department of Health (VDH) protocol for determining whether your well was Groundwater Under Direct Influence (GUDI), we began sampling more frequently and also conducted a series of Microscopic Particulate Analyses (MPAs). We sampled for the MPA three times this year, and so far, your wells have shown no risk to moderate risk for GUDI.

Quality Path Forward

There is one more sample left to take as part of this protocol and we intend to take it in December. If the results indicate that one or both wells are GUDI, we can either add treatment or use a new well(s). If it is (or they are) not GUDI, we do not need to do anything new in terms of quality. We will keep you posted on the final MPA results and will make a determination sometime in January whether we must add treatment (order of magnitude cost of \$4 million) or drill new wells (order of magnitude cost \$2 million).

Quantity/Capacity Background

With regard to quantity and your system capacity, you have been exceeding your VDH permitted capacity approximately 4-6 months out of the year (warm months) each year since 2006. Your permitted capacity is 83,200 gallons per day for the whole community (including buildout). This works out to be approximately 460 gallons per house per day. That yields an average of 200 gallons for inside the home, and 260 gallons for outside the home. During this past summer, the community used, on average 95,000 gallons per day. The top 12 users used 30% of the total, and they are using it outside the home, primarily for lawn watering. Last summer, average usage was 134,000 gallons per day; and the top 18 users used 38% of the water. Your water system, being that it is a groundwater system, was not built to sustain this volume of lawn watering.

Over time, this unsustainable water use has several negative effects. First, it can contribute to the future degradation of the water quality and the chance of GUDI by creating a larger zone of influence. It can also create shifts within the geology, which may contribute to the sinkholes already there. Last, but not least, there could be a point in the future where all the available water has been mined. There are two options for addressing this issue: reduce your outdoor water use in the warm months (no cost to you), or add some storage to the system, which would add to your permitted capacity (order of magnitude cost of \$700,000 minimum).

Quantity/Capacity Path Forward

At the meeting, we discussed the first option of reducing demand in the summer. It was agreed that our first initiative should be to reach out to the top quartile (25%) of users with some personalized assistance and information. We will begin that outreach later this fall and into the winter. Next summer (2009) will be the test to see whether this outreach and personalized service offered is enough to make the change. The second option we discussed was to also utilize the county ordinance for water restrictions. Whether we implement this next summer depends on how dry it is and how the community does on the whole. The third option we discussed is to add a third tier to your rate structure. This tier would be significant and would deter over watering, or at least enable us to collect the funds we would need to ultimately add capacity if residents chose to pay dearly for their exorbitant use of water. It is planned that this rate would be added prior to summer 2010.

Attached are the handouts that accompanied this discussion. In order you will find:

1. A matrix of our actions and efforts since we met with you in May
2. A graph of the total coliform/e.coli results in well 1 following rain.
3. A graph of the total coliform/e.coli results in well 2 following rain.
4. A graph of your (Raspberry Falls) water use, going back 3 years.
5. A bar chart comparing your summer 2007 use to the summer 2007 use in our other Community Systems.
6. A chart which shows the ranked order of your use. The x-axis is each home and the y-axis is the gallons used. Here you can see how the top quartile use accounts for approximately 60% of the total use. Getting this top quartile down to the median use will solve the issue, and get you all down to your permitted capacity.
7. Table "How to Meet Capacity"
8. Table "Demand Management Initiatives"
9. Table comparing costs for additional treatment with adding new wells

Thanks for your engagement and cooperation. We look forward to continued partnership while we solve these issues. Do not hesitate to contact me for information or with comments.

I can be reached at 571-291-7942 or email me at svillegas@loudounwater.org.

Sincerely,

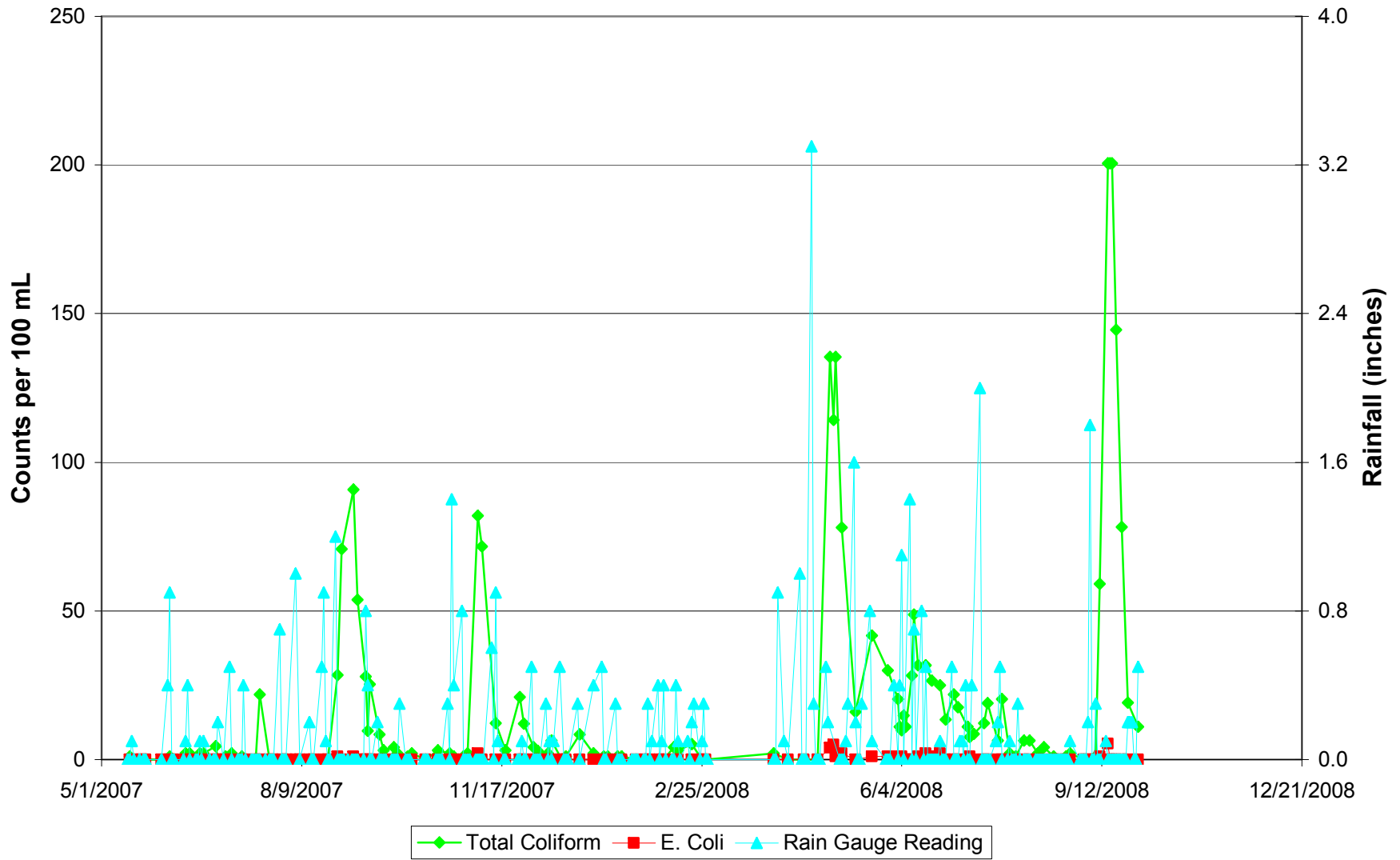
Samantha Villegas
Manager of Communications



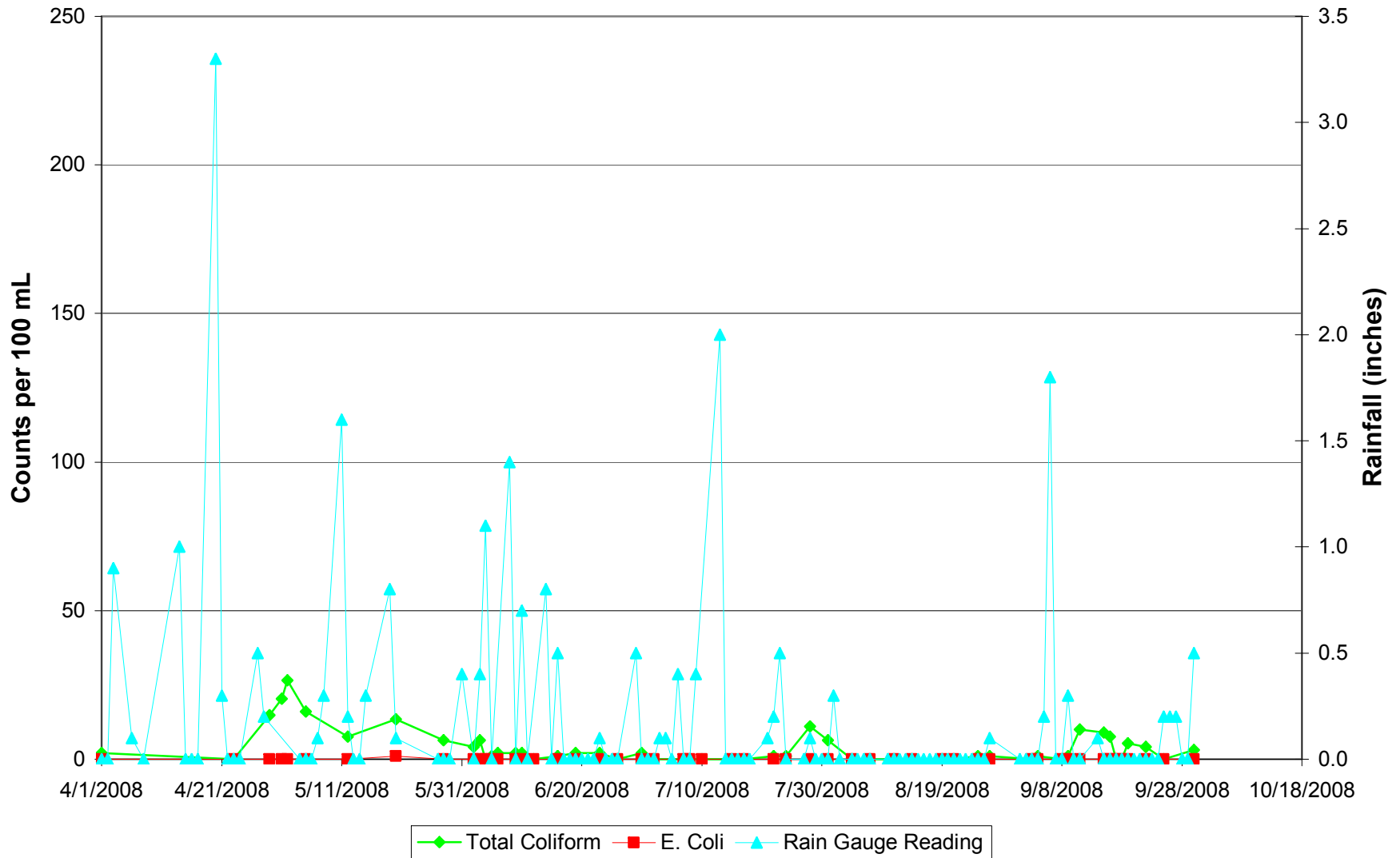
MATRIX AND HISTORY OF LOUDOUN WATER ACTIONS/ACTIVITIES 2008

	WATER QUALITY	CONTAMINATION SOURCE	QUANTITY ISSUE	WTP OPTION	GOLF WELL	NEW WELLS
MAY	Disinfection adjusted. PW-1 shut off. GUDI Investigation begins.	Photos of leaf pile shared with County Health and Golf Course; Clean-up commences.	Voluntary Restrictions announced May 5. Late May ave 41,500 gpd	Met with VDH to discuss. U-V alone not adequate, filtration also needed.		Pumping tests on Reserve Well.
JUNE	First wet-weather MPA done, results show presence of algae on lower end of Moderate risk. PW-1 turned back on (6/26).	An old, abandoned test well investigated for contamination and appears to not be a factor. Initial investigations into Bison Farm	Water use rose to 66,000 gpd in Mid-June. Water use rose again to 93,000 in late June.	Team kickoff; Consultant retained. Staff attends membrane workshop	Talks begin. Golf Well initial evaluation shows promise. Talks begin on use of reclaimed water for golf course.	Reserve Well shows it's affected by pump tests and close proximity to PW-2 and its Moderate reading for MPA takes it out of running for further investigation.
JULY	The first dry weather MPA conducted and results showed risk of 0.		Water demand down from late June.	Staff attend karst wrkshp. Membrane WTP tour. Met with VDH. Met w/designers @ site.	Pump tests on Golf Wells.	
AUG		Geologist report points to groundhog holes as possible entry points for surface water contamination. Bison Farm ruled not likely.	Usage spiked at 130,000 gpd. A postcard was sent out via snail mail as a reminder to curb use.	Concept of Design –drafted. Design details completed. Cost and schedule estim.	1 of 3 Golf Wells looks promising	Opened discussion of drilling new wells. Groundwater consultant found some varying geology.
SEPT	Second round of wet MPAs collected after Hanna (sampled twice 8 days apart), plus collected 2 samples from Selma. Bacti results following Hanna over 200 counts. PW-1 was shut off again.		As of early September, usage is at 5X winter demand.	Permitting issues explored Concept of Design –cmpltd.	Golf Course Well #3 wet weather MPA collected	Determine best spots for drilling. Looks like holes 1, 2 and 17 are ideal spots. Total of 5 sites with one alternate site selected.
OCT	4 MPA samples from PW-1 and PW-2, and 2 samples from Selma came back with risk of 0. PW-1 turned back on.			Preliminary costs and schedules developed. Membrane waste stream disposal options considered.		Wellhead Protection Committee meeting conducted. Committee toured potential new well sites. Received approval from County and State health department to drill at site locations. Drilling to initiate week of Oct. 27, 2008.

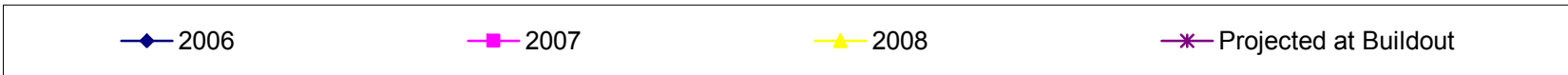
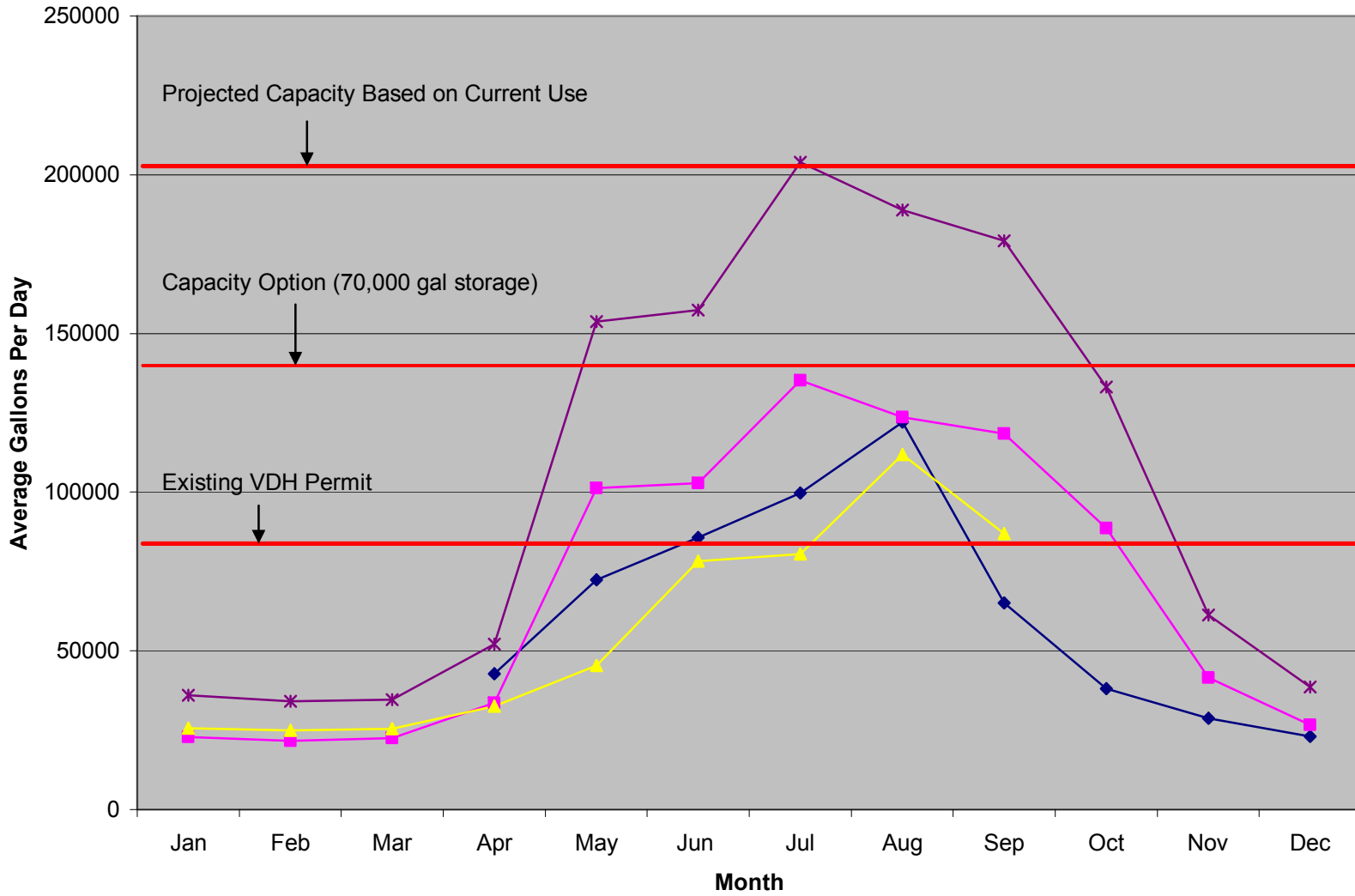
Total and E. Coli in Raspberry Falls PW-1v. Rain



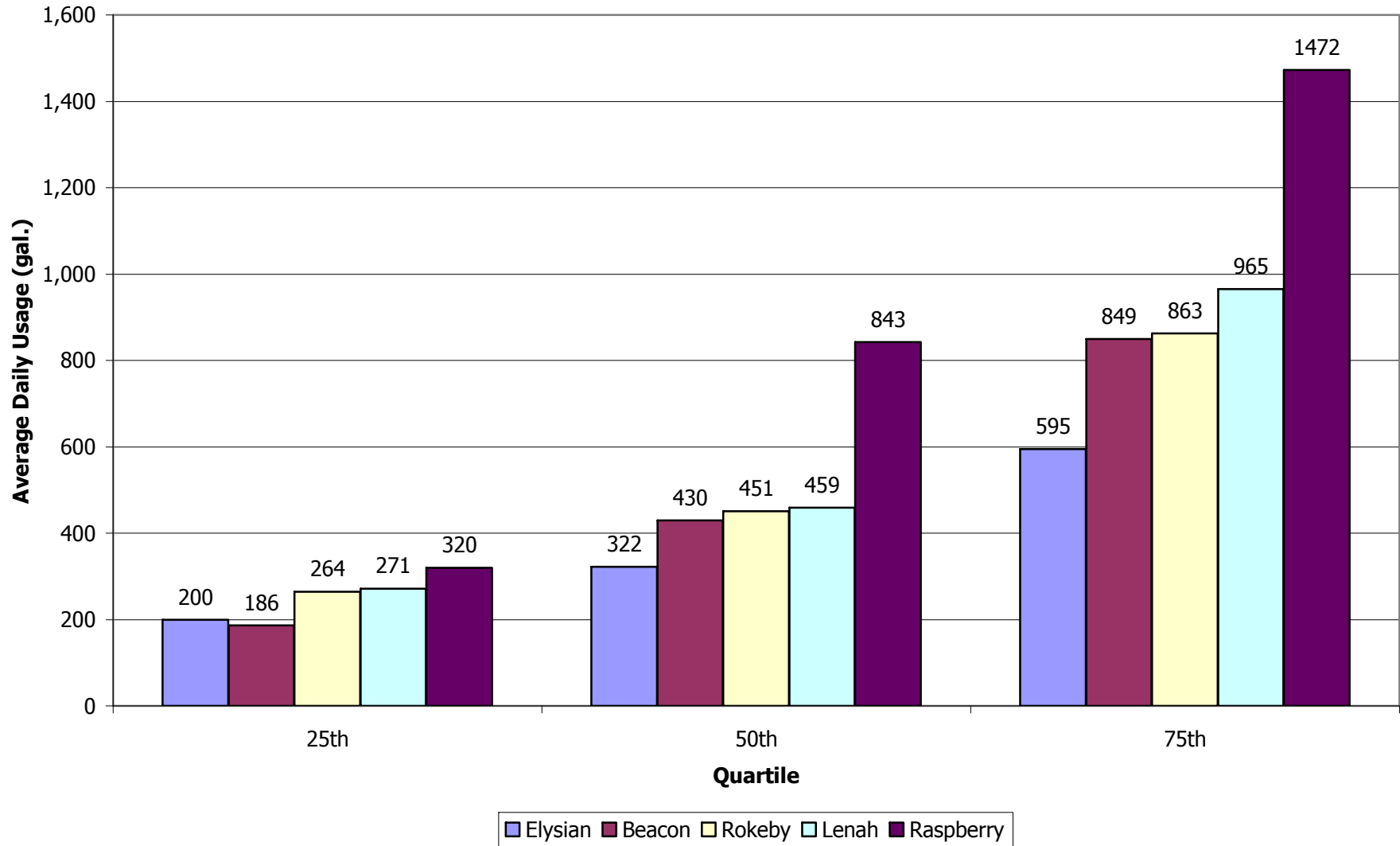
Total and E. Coli in Raspberry Falls PW-2 v. Rain



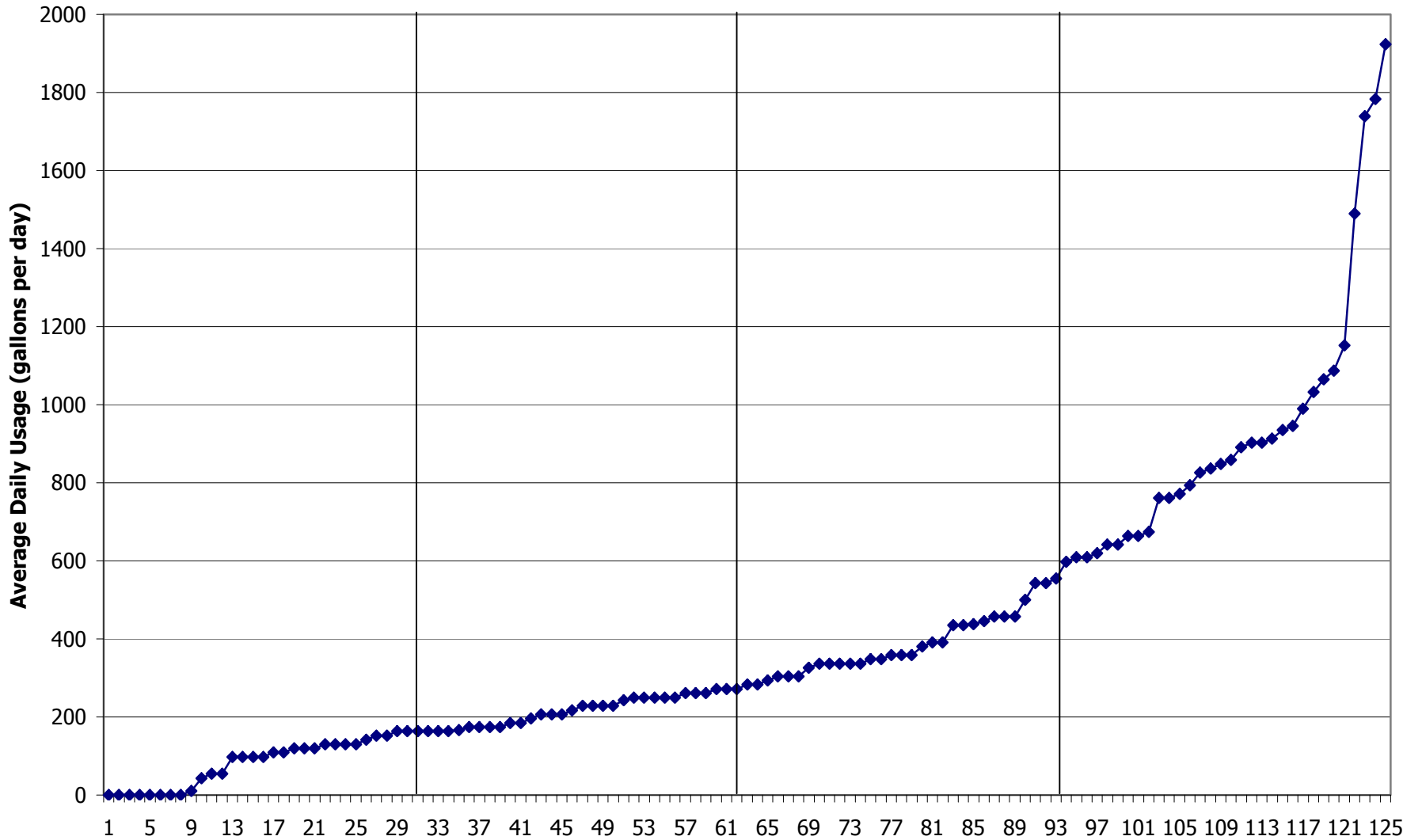
Raspberry Falls Average Monthly Demand



Summer 2007 Usage by Quartile



Raspberry Falls Rank-Ordered Spring Quarter 2008 Average Daily Usage



How To Meet Permitted Capacity

	Demand Management Alone	Demand Management w/Increase Capacity (\$700K-\$800K)*
Financing	Possible resident cost associated with investment in smart irrigation controllers (to be partially rebated by Loudoun Water.)	<ul style="list-style-type: none"> • Possible resident cost associated with investments in smart irrigation controllers (to be partially rebated by Loudoun Water.) • Cost to divided up by residents and Van Metre
Pros of Option	<ul style="list-style-type: none"> • Most sustainable use of well • Minimizes impact in Karst geology • Minimizes zone of influence • Delays/defers capital costs to increase supply • Uses water wisely • Cheapest option 	<ul style="list-style-type: none"> • May allow more flexibility for outdoor watering (irrigation) • Additional barrier for added protection
Cons of Option	<ul style="list-style-type: none"> • May not yield fully green lawn • Requires resident to change irrigation behavior • Possibly some costs to residents for investments in smart landscaping 	<ul style="list-style-type: none"> • Requires residents to change irrigation behavior • Must build storage tank(s) on property • Could be disruptive to facility operations during installation of new equipment • Added cost to resident • May not encourage efficient use of water

* Estimate provided for order of magnitude only.

PLANNED DEMAND MANAGEMENT INITIATIVES

<p>2009 Planned</p>	<ul style="list-style-type: none"> • Personalized outreach/education/tools to top quartile • Lawn watering up to 2 days per week on your designated use day: <ul style="list-style-type: none"> ○ Using a perm. irrigation system with a smart (weather-based) controller. ○ Using a positive shut off nozzle on your garden hose. • Trees and flower beds can be watered anytime with drip irrigation system or positive shut off nozzle on your garden hose. • Loudoun Water will provide rebates up to \$300 per home for smart (weather-based) controllers or drip irrigation. • Meter reading devices provided • Use will be tracked monthly and success will be evaluated in the fall. • No additional irrigation systems allowed in Raspberry Falls.
<p>2010 and Beyond</p>	<p>Depending on Summer 2009 success, we may implement one or more of following:</p> <ul style="list-style-type: none"> • A third tier conservation rate • Limited lawn watering May 1 through September 30; rest of year up to 2 days per week using a positive shut off nozzle only. • Charges assessed for visible/obvious wasting of water (sidewalks, watering in rain, etc.) • Required registration and audit of irrigation system (by Loudoun Water)

Raspberry Community Options for Additional Capacity PLUS New Water Source/Treatment

	Added Capacity Plus Drill New Wells	Added Capacity Plus Membrane WTP
	\$2Million*	\$4 Million*
Pros of Solution	<ul style="list-style-type: none"> • Less expensive to operate and maintain than filtration (WTP) option • Less chemicals stored on site than WTP option • Generates no waste stream 	<ul style="list-style-type: none"> • Offers multiple barriers of protection • Minimal land disturbance
Cons of Solution	<ul style="list-style-type: none"> • Well yield currently unknown; it may be less than existing wells. • Greater land disturbance due to installation of new water piping 	<ul style="list-style-type: none"> • More expensive to build and operate than drilling new wells • More chemicals stored on site • Generates waste streams, which require permits for waste disposal

*Estimates only, provided for order of magnitude. Estimates cover only capital costs, not higher operational costs.