

DD/08-230-02

August 12, 2011

Melody Ranch HOA  
P.O. Box 4337  
Jackson, WY 83001

ATTN: HOA Board of Directors

RE: **Melody Ranch – Addendum to 3<sup>rd</sup> Well Review**

Dear Board Members:

In June 2011, Nelson Engineering completed a review of the Third Well Report and Third Well Analysis which was completed by Jorgensen Associates (JA). Conclusions of our review were provided to you in a letter dated June 21, 2011 and included recommendation that a 3<sup>rd</sup> well should be installed to meet current and projected water demands.

This letter is provided as an addendum to our June 21 letter and therefore should be used as a supplement to the contents of the original letter.

Review:

WDEQ Chapter 12, Section 8, Subsection (d) “Hydraulic and Treatment Reliability” states: **“All treatment facility pumping shall provide the maximum daily flow with the largest single unit not in service.** Finished water pumping in combination with finished water storage that floats on the distribution system shall provide the maximum hour flow with the single largest unit not in service. When fire protection is provided, pumping and finished water storage that floats on the system shall provide the fire demand plus the maximum daily demand, or the maximum hour demand, whichever is greater. “

The well pumps in the source water wells are used for finished water pumping with all pumped flow being treated with a disinfectant prior to distribution. Therefore, for the Melody Ranch system, a strict interpretation of the WDEQ rules require that the system provide the maximum daily flow with the largest single unit not in service. This rule is more conservative than the Section 9 rule that only requires that where two wells are used, each well must be capable of providing the average day demand with the largest well out of service.

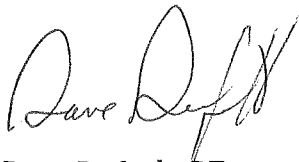
**A 3<sup>rd</sup> well should be added in order to comply with WDEQ Chapter 12, Section 8, subsection d.ii, since supply available from only one of the two existing wells is insufficient to provide the current and projected MDD with one of the wells out of service.** The second and third rules in subsection d.ii requires that the combination of

stored water and one well (since each well is the same capacity) provide peak hour demands. In this regard, the capacity of the water tank combined with flow from one well can provide both fire protection and the peak hour flow.

Adding a third well with 375 gpm capacity will provide the ability to supply 972,000 gallons per day (from two wells) plus 300,000 gallons (from the tank) for a total of 1,272,000 gallons per day with one of the three wells out of service. This amount exceeds the Maximum Day Demand.

**If one uses the WDEQ rules as the primary basis for determining the need for a 3<sup>rd</sup> well, a 3<sup>rd</sup> well will be required due to the requirements in WDEQ Chapter 12, Section 8. This conclusion holds true when considering both the current demands and the projected demands as presented by JA and as calculated by Nelson Engineering.**

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Dave Dufault". The signature is stylized and cursive.

Dave Dufault, PE  
Project Engineer