EXHIBIT B

Response to Walker Report entitled “Programmatic Operations and Management Technical Report for Micro-Irrigation of Vineyards in the Healdsburg Area”

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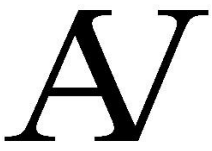

The Walker report states a generalized agronomic rate for irrigation in the Healdsburg-Windsor Russian River Middle Reach region. The values stated in the report refer to works based on sound science from, amongst others, a report from Hydrologist Gus Yates in 2010[i] and Viticulturist Mark Greenspan in 2013[ii]. There are some interpretations of those reports, especially with regard to the actual agronomic rates that are needed and commonly used by wine grape growers in much of the region. However, as the author of the 2013 document, I find that the agronomic rate for vineyards stated in the Walker report ignores values determined under actual field conditions in the Middle Reach Russian River region and overstates the actual amount of irrigation that may be used by vineyards. While the agronomic rate specified may have been purposely liberal for purposes of demonstrating a worst-case scenario for nitrogen, salinity and groundwater issues, it presents an overestimate of what will actually be needed by growers, and points to a potential imbalance of recycled water production and its use for irrigation.

There are really two issues at hand: one is when irrigation typically commences during the growing season and the other is how much irrigation water is applied during the portion of the growing season relative to common ways of quantifying irrigation requirements.

Seasonal initiation of the irrigation cycle:

It would be a serious mistake to assume that irrigation of vineyards occurs throughout the growing season. In fact, the amount of winter and spring rainfall that fall in this region almost always (including drought years) fills the soil to field capacity at the time of the early stages of vine vegetative development, allowing growers to hold off on their irrigation applications until quite late into the growing season. It is estimated, based on anecdotal discussions as well as firsthand experience, that most growers in this region begin their irrigations during late June through mid-July, and then irrigate up to the time of harvest. With current monitoring technologies, including the soil moisture devices and plant moisture devices demonstrated in the 2012 Middle Reach study, the commencement of irrigation was shown to be able to be delayed until very late July in all sites evaluated and some sites were not irrigated at all.

The actual starting time for irrigation depends on spring rainfall patterns as well as a site's water holding capacity (WHC) within the root zone. Soils in this region vary in their depths and their overall water holding capacities. A survey using the NRCS soil survey (soil web online) indicated that within the region of interest, WHC ranges from 1.8 inches to 10.6 inches. Of the area surveyed, 21.3% was in the range of 6.6 to 9.0 inches of storage while 68.3% was in the range of 9.1 to 10.6 inches of storage. In our experience, vineyards with WHC of 6.0 inches or greater of WHC require very little or no irrigation and irrigation may be delayed until very late into the season (often into September) and many vineyards may be dry-farmed. Many vineyards are on Yolo loam and Yolo silt loam soils, which have the highest WHC of all soils in the region, because of their soil texture and extreme depth.

It is understood that the majority of growers in the region do not dry-farm and irrigation is practiced in most of them. However, the actual application of irrigation water is likely to be far less than what was used as a basis of computation for the Yates report, in part because of the allowable delay in the commencement of irrigation to many vineyards in this region, who draw upon stored soil moisture reserves prior to applying their first irrigation. The viticultural motivation for waiting for depletion of stored moisture reserves cannot be overstated. Irrigating before stored reserves are mostly depleted will result in excessive vegetative vigor, which is highly detrimental to wine quality and adds costs to the grower with regard to canopy management (i.e. trimming and shoot positioning).

The subject vineyard used in the Yates report was Syar, which has some soils that are very gravelly and highly stratified and represent some of the lowest WHC soils in the region. Hence, Syar's irrigation application volume per season is very likely to be substantially higher than in the surrounding vineyards in the same region due largely to earlier commencement of irrigation. The estimate of 4 to 6 inches stated in the Yates report was based on verbal communication with the vineyard manager, and was likely due to a crude estimate. The Greenspan study reported that the actual application rate was between 0.8 and 4.7 inches, with the highest irrigation amount being a block that had accidentally been left running overnight. For the Yolo Sandy Loam and the Cortina Very Gravelly Loam sites, the seasonal application was 2.1 and 4.1 inches, respectively. Hence, the actual agronomic rates for the vineyard blocks at Syar are likely much less than the 4 to 6 inches stated in the Yates report. It can be assumed that much of this discrepancy can be attributed to the delay in the actual irrigation start date.

Walker states an equation on page 8, indicating that irrigation requirement is equal to full crop evapotranspiration minus effective precipitation. His equation is incomplete and must include soil moisture storage (from winter and spring rainfall) to be complete. This is not a trivial omission and accounts for a much more significant proportion of this relationship than effective precipitation does in this climate, which is mostly arid during June through September.

Walker discusses on page 11 that the 75% of full ETc will be distributed over the March to October growing season. This is clearly not true, as the replacement of vineyard ETc will be replaced only after the storage reserves are depleted, which will be much later than March.

Percentage of ETc applied:

The application of reference Evapotranspiration (ETo) is a commonly-used approach to agricultural irrigation scheduling as well as determination of vineyard irrigation requirements. The model is useful, but subject to many assumptions and as a result, is error-prone. The model relies on an estimated water use based on weather data and estimates the water use of a reference crop of mixed grasses mowed to a moderate height. This daily estimate of water use for the reference crop must be "corrected" to reflect water use of the subject crop. This uses

the “crop coefficient”, which is the primary source of potential error in this method. The crop coefficient corrects the reference ET to reflect the “true” crop ET. Both Yates and Walker cite the Larry Williams work[iii] that relates % shaded area at solar noon to the crop coefficient using a multiplying factor of 0.017 to convert from % shaded area to fractional crop coefficient. The Williams work is sound, based on the measurements stated, but the shaded area from a vineyard canopy is not necessarily consistent enough to employ this function universally. For instance, actual shaded area at solar noon depends not only on solar elevation, but also on row orientation, as shadows cast on the ground will differ based on these factors. Williams also reported, in an industry trade publication[iv], that values may be used for different types of canopies. For VSP trellises at 8 feet between rows, the maximum crop coefficient is 0.62. That value is lower for wider row spacing and higher for closer row spacing. Walker estimated this value to be 0.68 for their sample calculation, which was not too far off of the published recommended value to be of tremendous concern.

However, the percentage of full ETc used by Walker in their agronomic rate determination was 75% of full ETc. It was found in the Greenspan project that much lower fractions of full ETc may be used in practice in vineyards in this same region. Greenspan found that between 5% and 40% could be applied to vineyards without inducing excessive vine stress, including vineyards at the Syar site. Hence, the use of 75% of full ETc is clearly a substantial over-estimate relative to what is likely to be applied in practice. In fact, the estimate of agronomic rate determined by Yates of 4.7 inches is seemingly much higher than is actually needed by most vineyards, though the estimate of Yates is in agreement of what Greenspan found only one site at Syar, which was the site with the accidental excessive irrigation application that biased the result. Yet in other soils in the middle reach, the agronomic rate was found to be much lower – between 0.6 and 2.1 inches. This corresponds to application percentages of ETc between 5% and 18%. Higher percentages, up to 40%, were needed only in the most gravelly soils, which was still far less than the 75% suggested by the Walker document.

The reduction of fraction of full ETc is due, in part, to intentional imposition of mild water stress on vines before irrigation commences, for purposes of controlling canopy growth as well as stimulation of the fruit’s biochemical ripening processes. In so doing, the vines limit their water use via stomatal (leaf pore) closure, which puts them in a state of higher water use efficiency than they would be if non-stressed. This water use efficiency component is not accounted for by the ET-based model, and this is reflected in the much lower-than-expected percentages of full ETc seen during the 2012 study and in general practice for high-end vineyards.

Walker referred to the Greenspan document and created a table of the results. He states “the sites evaluated used far less irrigation water than required and could have used more water without adverse effects on the vines”. This statement is incorrect from a viticultural standpoint. The rate of irrigation applied during that study was a reasonable amount and any additional

water should be considered as an excessive amount that may well have adverse effects on the vines, insofar as wine quality and possibly farming costs are concerned.

Nitrogen relations:

Finally, the nitrogen requirements by vineyards was discussed as a matter of determining the application of waste water containing nitrogen relative to the needs of the vines. There is a complicating factor not discussed in the Walker report, where the actual irrigation applications in vineyards is applied late in the growing season (usually after veraison through harvest and post-harvest) when the vine requirement for nitrogen declines from veraison onward. So, the delivery of nitrogen to vineyards by way of recycled water will not supply the nitrogen needed by the vines during the time of greatest need (early in the growing season and up through veraison). Hence, application of irrigation water containing nitrogen will not deliver the nutrient at the most optimal time. Walker indicates that 7.5 pounds of nitrogen per acre may be applied using recycled water, but that amount is a large proportion of the total needs for each season. However, applying this much nitrogen late into the season may induce vegetative re-growth, which would be undesirable for winegrape growers. Post-harvest irrigations may typically be accompanied by a small application of nitrogen-containing fertilizers, but vines are typically irrigated after the post-harvest fertilization. When leaves fall, demand for water and nutrients falls off steeply. Any nitrogen not taken up will be leached below the root zone by winter rainfall, eventually ending up in the ground water.

Overall, the report presents a good set of best management practices, but grossly overstates the agronomic rate of irrigation for vineyards in the Middle Reach of the Russian River region. The demands of the region's vineyards is likely to be far less, which suggests that the design of the system needs to be re-worked based on a much lower agronomic rate.

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[i] Yates, Gus. Impacts of Recycled Water Irrigation on Groundwater and Surface Water Flow and Quality near Healdsburg: a Generalized Approach. September 21, 2010

[ii] Greenspan, Mark. 2012 Middle Reach Russian River Irrigation Demonstration Project. February 8, 2013.

[iii] Williams, L.E. and J.E. Ayars. Grapevine water use and the crop coefficient are linear functions of the shaded area measured beneath the canopy. Agricultural and forest meteorology 2005 Oct. 3, v. 132, issue 3-4

[iv] Williams, L.E. Irrigation of Winegrapes in California. Practical Winery and Vineyard. November/December 2001.