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Jo Anne Kipps
Fresno, California

Patrick Pulupa, Executive Officer
Central Valley Regional Water Quality Control Board

Via email to: Jeffrey.Hannel@waterboards.ca.gov

Comments on Proposed Stipulated Cease and Desist Order for E. & J. Gallo Winery, Fresno Winery, Fresno County

The proposed order, issued on 2 May 2025, imposes a five-year deadline for E. & J. Gallo Winery (Gallo) to achieve compliance with Waste Discharge Requirements (WDR) Order R5-2015-0040 at its Fresno Winery, or cease its discharge of winery wastewater to its 400-acre land application area (LAA). Gallo is the world's largest wine company. Its Fresno Winery, among the largest in the nation, has been discharging winery wastewater and stillage to LAA fields for 75 years.

Preface. Compared to municipal sewage, untreated winery wastewater and stillage contain higher concentrations of organic nitrogen and much higher concentrations of 5-day biochemical oxygen demand (BOD). Once applied to soil, BOD decomposes rapidly in the presence of free oxygen and organic nitrogen decomposes into plant available forms (ammonia and nitrate). Land treatment of winery wastewater and stillage requires soil conditions alternate between aerobic (available free oxygen) and anoxic (low or no free oxygen). The 'black box' of soil treatment relies on bacteria to (a) rapidly decompose BOD in the presence of free oxygen, eventually to carbon dioxide gas, which is significantly heavier than air; (b) mineralize organic nitrogen to ammonia; and (c) nitrify ammonia to nitrate. Once free oxygen is depleted, remaining BOD supports bacterial denitrification, a process that transforms nitrate to nitrogen gas, which is lighter than air. Insufficiently long rest intervals between waste applications can trap carbon dioxide, which readily dissolves in soil-pore liquid to form a weak acid buffered by the creation of alkalinity and mobilization of soil minerals (e.g., calcium and magnesium).

During my employment by the Regional Board from 1998 to 2010, I was personally involved in the regulation of several Gallo facilities, including its Fresno Winery. Gallo began monitoring groundwater there about 25 years ago. In 2001, nitrate-nitrogen in MW-6, currently one of the most impacted wells, was less than twice the water quality objective (WQO) of 10 mg/L. By 2010, the WQO exceedance factor was four. About that time, Gallo began treating the winery's non-crush wastewater and stillage and discharging it to LAA fields and the Fresno-Clovis Regional Wastewater Treatment Facility (Fresno WWTF). A restriction in sewer line capacity prevents Gallo from discharging the winery's entire wastewater flow during crush to the Fresno WWTF. Its pretreatment system features an anaerobic biological reactor. Gallo uses ammonia to raise the pH of naturally-acidic winery wastewater to levels conducive for optimal anaerobic treatment. Effluent from the pretreatment system contains high concentrations of plant-available ammonia and substantially lower BOD concentrations.

In April 2015, the Regional Board adopted the current order, which requires vadose zone monitoring in LAA fields receiving BOD loadings in excess of 150 pounds per acre per day (lb/ac/day). At that meeting, I requested the Regional Board issue Gallo a cleanup and abatement order (CAO) addressing the nitrate plume Gallo's discharge created in groundwater flowing toward municipal supply wells. After the current order's public hearing, I spoke with Gallo's representative, Mr. Chris Savage, in the

crowded lobby of the Fresno office. [I have spoken of this incident to many people over the years.] I recall telling him something to the effect that I was eager to see the sample results of the vadose zone monitoring system because the reduction in BOD from treatment will likely lead to significant nitrate breakthrough.

In June 2015, staff released a tentative CAO for Gallo Fresno Winery to which I submitted comments, as did Gallo. At the November 2015 meeting's public forum, I informed the Regional Board that Gallo's response to the tentative CAO contained opinions requiring interpretation and application of engineering or geologic sciences and that the response author, Mr. Savage, is not a licensed professional in either field. I requested staff re-circulate the tentative CAO if it is revised pursuant to Gallo's response. I also complained that Gallo still had not installed the required vadose zone monitoring system. [Gallo had requested a delay until after the completion of a similar system at another winery.] In the meantime, Gallo has avoided installing the system by more-or-less maintaining cycle-average BOD loadings below 150 lb/ac/day. By 2018, the WQO exceedance factor in MW-6 increased to 11 and further to 14 by 2022. Clearly, this is not sustainable.

Proposed Order. The proposed order's presentation of facts thoroughly and convincingly documents serious violations of the current order. The evidence justifies naming Gallo as culpable for creating a condition of nitrate pollution in groundwater that impairs its use for municipal supply. It indicates Gallo has committed to divert by 2030 all winery wastewater to the Fresno WWTF and/or an offsite regulated facility. Its Required Action 1 sets a 30 June 2030 deadline for Gallo to cease all LAA waste discharges "unless those discharges are in full compliance with" the current order.

The proposed order will 'stop the bleeding' by requiring the LAA discharge cease by 2030, or earlier if the "Discharger fails to comply with any of the requirements of this Order or the Executive Officer determines discharges to the LAAs are continuing to cause or threaten to cause degradation of groundwater at an unreasonable rate" (Required Action 4, Curtailment of Discharges). And, it cites a potential Administrative Civil Liability of up to $10,000 per violation, per day. It is a robust enforcement action that is long overdue.

However, the proposed order's inclusion in Required Action 1 of the phrase, "unless those discharges are in full compliance with [the current order]," is problematic. Determination of Gallo's "full compliance" involves technical opinions requiring interpretation and application of engineering or geologic science. Inclusion of the phrase appears to 'open the door' for Gallo, or rather Gallo's long-time engineering consulting firm, Kennedy/Jenks Engineering Consultants (K/J), to submit yet another spreadsheet model of soil treatment reliant on myriad assumptions to posit, yet again, that current groundwater impacts are the legacy of long-past discharge practices and do not reflect the material change in the nature of the discharge resulting from pretreatment.

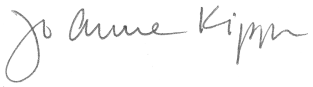
Gallo's Fresno Winery case file contains many examples of staff explaining to Gallo why technical opinions rendered by K/J are not supported by fact. Among the most egregious is K/J's claim of a decades-long travel time for applied water to reach groundwater. Despite facts indicating otherwise (current order Findings 74 and 75), K/J persists in citing this claim to blame past decades' discharge practices for worsening nitrate impacts evident today (e.g., Finding 22). Of course, Gallo could have 'nipped this in the bud' ten years ago by implementing vadose zone monitoring to take a 'look inside the black box' of soil treatment. But it never did.

Unless information exists indicating otherwise, LAA fields should be considered a 400-acre concentrated source of nitrogen that, short of capping (e.g., asphalt paving), will continue to release nitrate to groundwater in concentrations exceeding the WQO for decades to come. Despite this, Gallo may submit technical documents prepared by K/J purporting it has achieved full compliance with the current order. If this happens, on the behalf of staff and Fresno City utility rate payers such as myself, I request that Gallo be required to submit pursuant to Water Code section 13267 independent, third-party technical evaluations along with each such submittal.

The proposed order is an encouraging sign that the Regional Board is serious about protecting the municipal groundwater supply of the Central Valley's most populous city. I concur with its terms and conditions and will not contest it at the public hearing. However, should Gallo address the Regional Board during the hearing, I request the opportunity to do likewise and for longer than the three minutes typically allotted to interested parties.

In the meantime, the threat to municipal supply wells from Gallo's decades-long discharge warrants the issuance of a cleanup and abatement order (CAO) without unnecessary delay. The CAO should require immediate implementation of mitigation measures effective at controlling the nitrate plume's spread offsite toward municipal supply wells. I encourage staff consider the following: extracting groundwater within the plume along the LAA's western border; destroying damaged irrigation supply wells that pose a direct threat to deeper groundwater; and, after securing the necessary permission and authorization, lining the irrigation canal that transects the LAA. Just as it took decades to create the nitrate plume, it will take decades to control its spread.

Thank you for your time and consideration. Please ask staff let me know if I may address the Regional Board at the public hearing and for how long.



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