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Jo Anne Kipps
Fresno, CA

Patrick Pulupa, Executive Officer
Central Valley Water Quality Control Board

Via email to: centralvalleyfresno@waterboards.ca.gov copy to Cruz.Romero@waterboards.ca.gov and Bryan.Rock@waterboards.ca.gov

Comments on tentative WDRs for Olam Food Ingredients, Hughson Nut Processing Facility, Merced County

The cover letter for the tentative waste discharge requirements order (WDRs) identifies a comment deadline of Monday, 11 November. As yesterday was a federal holiday, I assume that the comment deadline is today at 5 p.m.

The tentative waste discharge requirements order (tentative order) for Olam Food Ingredients (OFI or Discharger), Hughson Nut Processing Facility (Facility), proposes to authorize an existing unregulated discharge of up to 8,500 gallons per day (gpd) and 2.5 million gallons per year (MGY) of untreated nut processing wastewater to an unlined 0.16-acre pond and a 7-acre land application area (LAA) planted in almonds.

Complicated Ownership History. According to Findings 1 and 2 of the tentative order, Merced County tax records show OA Fresno Realty, LLC as the owner of the Facility property. OFI acquired Hughson Nut, Inc. (HNI) in 2019, and HNI merged with OA Fresno Realty, LLC in October 2021. APB Partners was the previous owner of HNI and, in 2002, acquired the Facility.

A 10/22/2019 press release[1] announced Olam International Limited's signature of a purchase agreement to acquire a 100% interest in HNI. It states that HNI "ranks among the top five almond processors in California." OFI is a Singapore-based corporation formed in 2020 that has "market-leading positions on six continents."[2] According to the California Secretary of State Business Search website, HNI was formed in August 1985, and APB Partners, LLC, in 2006. Both HNI and APB Partners, LLC filed Statements of Information in 2024 indicating their existence as a California Corporation and Limited Liability Company, respectively.

Comment 1: If APB Partners, LLC was not formed until 2006, why does the tentative order name it as the legal entity that acquired the Facility in 2002? Also, OFI was formed in 2020, so

[1] https://www.olamgroup.com/news/all-news/press-release/ofi-publishes-further-information-for-investors.html
[2] https://www.ofi.com/investors.html

it was its predecessor, Olam International Limited that apparently acquired a 100% interest in HNI in 2019. Please consider revising Findings 1 and 2 to indicate the purchaser of HNI in 2019 as Olam International Limited and that OFI, formed in 2020, currently has 100% interest in HNI.

And, even if OFI has a 100% interest in HNI, since HNI is a California corporation, shouldn't the tentative order name HNI as discharger, or at least both OFI and HNI as co-dischargers? Identifying OFI as discharger because it has 100% interest in HNI implies that WDRs are supposed to identify as discharger(s) all entities that have an interest in the company that owns and operates the discharging facility.

And, what role does APB Partners, LLC currently play, if any, in the ownership of the Facility, the Facility property, or both?

Long-Term Unauthorized Discharge. The Facility has existed at least since 1983 (Finding 2). HNI operates two other nut processing facilities in the Central Valley Region, both in Hughson, Stanislaus County. One is located at 6049 Leedom Road, the other, at 1825 Verduga Road. WDRs currently regulate the discharge of nut processing wastewater to land at each. WDRs 98-012 for Morven Partners, L.P. Cal-Almond regulates the Leedom Road facility discharge, and WDRs R5-2014-0059 for Hughson Nut, Inc., Verduga Road Almond Processing Facility regulates the Verduga Road facility discharge. CIWQS does not link Name Change Resolution Orders for the Leedom Road facility (changing the discharger name to HNI, then to OFI), or for the Verduga Road facility (changing the discharger name to OFI).

Comment 2: Did the Regional Board adopt Name Change Resolutions for WDRs 98-012 and WDRs R5-2014-0059? If so, please update CIWQS to reflect this. If not, consider proposing the appropriate name changes in a future Name Change Resolution.

The earliest Google Earth images depicting the Facility's stormwater pond and wastewater pond date to 6/16/2011 and 4/11/2013, respectively. Because HNI owns two facilities with discharges to land regulated by WDRs, it is aware of the regulatory requirements for discharging nut processing wastewater to land. Despite this, HNI apparently initiated an unauthorized waste discharge to the unlined pond in 2013. Ten years after HNI apparently initiated the pond discharge, Lance Hershman (RCE 70296) with Brown and Caldwell submitted on the Discharger's behalf a Report of Waste Discharge (RWD) and technical report characterizing the discharge, and Brown and Caldwell submitted a revised RWD containing information requested by Regional Board staff (tentative order, Information Sheet).

Comment 3: If the Facility existed since 1983, how did HNI dispose of nut processing wastewater before constructing the wastewater disposal pond in 2013? And, who certified the Form 200, an official of HNI or OFI?

Current Discharge Flows and Disposal Method. In 2022, the average daily flow to the wastewater disposal pond was about 5,400 gpd and total flow was about 2 MGY

(Finding 10). Wastewater is not regularly applied to land (i.e., the 7-acre LAA), however a portable pump and hose can be used to apply wastewater to the LAA (Finding 13). The Discharger has an irrigation well that delivers groundwater to the LAA via a sprinkler irrigation system (Finding 13). The RWD's water, nutrient, and salt balances all apparently assume that all the Facility's wastewater will be applied uniformly across the entire 7-acre LAA. The tentative order's Land Application Area Specification G.2 requires nut processing wastewater to be "applied and distributed with reasonable uniformity across each LAA block." Distances from the wastewater pond to LAA corners range from 150 to 700 feet. Because the Discharger has no permanent wastewater delivery system, it is difficult to imagine how it will be able to consistently comply with Land Application Area Specification G.2 using only a portable pump and hose.

*Comment 4: The discharge of nut processing wastewater to the wastewater pond does represent a discharge to land. Please revise Finding 13 to read: "…*is not regularly applied to ~~land~~ *the LAA, …." Please explain how the Discharger will achieve compliance with Land Application Area Specification G.2 using just a portable pump and hose. Consider including a provision requiring the Discharger to submit a proposed plan for a wastewater delivery system or method that, once implemented, will consistently assure its ability to comply with this specification.*

Discharge Vicinity Soils. Finding 27 indicates area soils are predominately Delhi sand and some Atwater loamy sand. It characterizes Delhi sand soils as "somewhat excessively drained" with "rapid permeability." The online soil map published by the University of California, Davis[3] shows Delhi sand in the area encompassing the unlined wastewater pond and the southern half of the LAA and Atwater loamy sand in the northern half of the LAA. It classifies Delhi sand as "Somewhat excessively drained" and Atwater loamy sand as "Well drained." These drainage classes are defined as follows:[4]

> **Somewhat excessively drained.** Water is removed from the soil rapidly. Internal free water occurrence commonly is very rare or very deep. The soils are commonly coarse-textured and have high saturated hydraulic conductivity or are very shallow.
>
> **Well drained.** Water is removed from the soil readily but not rapidly. Internal free water occurrence commonly is deep or very deep; annual duration is not specified. Water is available to plants throughout most of the growing season in humid regions. Wetness does not inhibit growth of roots for significant periods during most growing seasons. The soils are mainly free of the deep to redoximorphic features that are related to wetness.

Finding 27 states the hydraulic conductivity of the most limiting layer of Delhi sand is "5.95 to 19.98 inches/hour," or 4,344 to 14,585 inches/month.

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[3] https://casoilresource.lawr.ucdavis.edu/gmap/

[4] U.S. Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI.

Unlined Wastewater Pond. Finding 12 provides data on the wastewater pond's area, depth, and working volume. It indicates that, because wastewater is not subject to any kind of treatment, not even screening, solids will accumulate on the pond bottom. The accumulated solids will form a sludge layer that is expected to retard the rate at which wastewater percolates to groundwater. Finding 12 further indicates that the estimated rate of wastewater percolation from the pond is extremely low, "approximately 0.9 inches per month." This percolation rate is not supported by hydraulic conductivities associated with Delhi sand (i.e., 4,344 to 14,585 inches/month), and is equivalent to a hydraulic conductivity of $8.7x10^{-7}$ cm/s. This is less than the $1x10^{-6}$ cm/s hydraulic conductivity standard prescribed for winery wastewater pond liners in the State Water Board's General WDRs for Winery Process Water (Order WQ 2021-0002-DWQ).

It appears that nut processing wastewater disposal has been and will presumably continue to be predominately through percolation and evaporation in the unlined wastewater pond. The discharge of 2 MG in 2022 to the 0.16-acre pond yields a wastewater hydraulic loading of 38 feet per year (ft/year). Finding 29 cites the discharge area's reference evapotranspiration rate as 55.1 inches per year (4.6 ft/year). Subtracting annual evaporative loss from the 38 ft/year hydraulic loading yields a wastewater percolation rate of about 33 inches/month, which is considerably greater than the estimated 0.9 inch/month rate presented in Finding 12.

Comment 5: Please confirm the accuracy of the estimated 0.9 inch/month percolation rate for the unlined pond, which is constructed in Delhi sand. If staff accepts as accurate the estimated 0.9 inch/month pond percolation rate in the tentative order, please explain (1) why the estimated percolation rate is so much less than the hydraulic conductivities of the limiting layers of Delhi sand cited in Finding 27, and (2) how a bottom sludge layer of nut processing solids in the unlined pond can reduce wastewater percolation to a rate lower than the hydraulic conductivity standard in the General Winery Order?

The annual wastewater flow is substantially less than the total irrigation demand of almonds in the 7-acre LAA, according to the water balances submitted with the RWD (Finding 17).

Comment 6: Please confirm whether the RWD's water balances assumed the entire Facility's wastewater flow would be applied to the LAA for crop irrigation? If the water balances did include annual volumes of wastewater disposed of by evaporation and percolation in the unlined pond, did the RWD provide estimates for the loadings of biochemical oxygen demand (BOD) and total nitrogen in wastewater percolating from the unlined pond?

Discharge Quality and Constituent Loadings to Land. Finding 31 characterizes the Facility source water as being of excellent mineral quality, with 210 mg/L total dissolved solids (TDS), 34 mg/L sodium, and 8.3 mg/L chloride. Finding 15 characterizes Facility wastewater based on 14 grab samples taken presumably from the Facility's wastewater

sump between March 2020 to August 2022, and five samples taken from the wastewater pond in March and April 2020. The resulting quality data is variable, indicated by the wide range of values for the various monitored constituents. The RWD projected annual loadings of FDS of 6,900 pounds per acre (lb/ac) and Total Nitrogen of 45 lb/ac, and daily loadings of BOD of 0.9 lb/ac/day. These loadings apparently assume that the entire authorized wastewater flow of 2.5 MGY would be disposed of by uniform application to the 7-acre LAA via flood irrigation (recall, by portable pump and hose).

However, it appears that the majority of the wastewater flow may actually be disposed of by percolation and some evaporation in the unlined pond. The worst-case loading scenario assumes the entire Facility wastewater flow is discharged only to the unlined pond (i.e., no discharge to the 7-acre LAA is necessary for wastewater disposal). Using average values of wastewater pond results for FDS, Total Nitrogen, BOD, Sodium, and Chloride contained in Table 3, an annual discharge of 2 MG and an apparent annual percolation rate of 33 ft in 2022, yields the following loadings to the 0.16-acre pond:

Constituent	Concentration mg/L	Annual Mass lb	Annual Loading lb/acre	Daily Loading lbs/acre
FDS	814	11,680	73,000	--
Total Nitrogen	15.4	220	1,380	--
BOD	142	2,040	12,700	34
Sodium	259	3,720	23,200	--
Chloride	306	4,390	27,400	--

Obviously, these loadings are considerably greater than those cited in the RWD, which again apparently assumes the entire authorized 2.5 MGY will be disposed of via uniform application to the 7-acre LAA.

Comment 7: Please confirm whether in the past the Discharger used a portable pump and hose to apply impounded nut processing wastewater to the 7-acre LAA. If discharge to the LAA was infrequent, or if it didn't occur at all, please revise the tentative order to disclose that in the past the entire Facility nut processing wastewater discharge flow was disposed of via percolation and evaporation in the unlined pond. And, revise the tentative order to disclose the estimated loadings of FDS, total nitrogen, and BOD to the 0.16-acre pond at the authorized 2.5-MGY discharge flow rate.

The loadings tabulated above demonstrate that the discharge of untreated nut processing wastewater to the 0.16-acre unlined pond is a concentrated source of waste constituents. They further also call into question the tentative order's Finding 69, which exempts the ongoing discharge from the prescriptive containment standards of Title 27 (California Code of Regulations, Title 27, section 20005 et seq.).

Also, the tentative order's Groundwater Limitations require the discharge to "not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background groundwater quality, whichever is greater:

> Constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, excluding salinity provided the Discharger complies with Provision J.3 [H.1].
>
> H.2: Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses, (e.g., by creating off-tastes and/or odor, producing detrimental physiological responses in human, plant, animal, or aquatic life [i.e., toxicity]) [H.2]."

The tentative order's groundwater limitations conditionally exclude compliance with water quality objectives for salinity. However, they still include numerical limitations for waste constituents in the discharge (i.e., dissolved iron and dissolved manganese) and waste constituents resulting from the discharge (i.e., nitrate and dissolved forms of iron, manganese, and arsenic). Consequently, the discharge to the unlined pond threatens to violate the following:

> Discharge Prohibition B.1 – No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitation of this Order.
>
> Discharge Prohibition B.3 – Wastewater treatment, storage, and disposal shall not cause pollution, or a nuisance as defined by Water Code section 13050.
>
> Discharge Prohibition B.5 – Waste constituents shall not be discharged or otherwise released from the Facility (including during treatment and storage activities) in a manner that results in: (a) Violations of the Groundwater Limitations of this Order; or (b) Conditions of "nuisance" or "pollution," as defined per Water Code section 13050.

To summarize, the tentative order indicates the following:

- The soil in which the unlined pond was constructed (Delhi sand) exhibits rapid permeability
- Facility wastewater flows have apparently been disposed of entirely by pond percolation (and some evaporation)
- Area groundwater is of good quality for salinity constituents
- Deeper groundwater extracted from the Facility supply well is of excellent quality
- The LAA acreage is more than adequate to dispose of the Facility's entire authorized 2.5-MGY wastewater flow by crop irrigation.

Not only does the tentative order's assumed pond percolation rate of 0.9 inch/month not make technical sense, it serves to obfuscate the ongoing discharge's actual threat to groundwater. Because it assumes an apparent inaccurate pond percolation rate, it fails to consider the discharge to groundwater from wastewater impounded in the unlined pond in its findings regarding the discharge's compliance with the Antidegradation Policy. Had it accurately characterized this discharge and its concomitant loadings of waste constituents, it would have provided the necessary justification for it to require the pond be equipped with a liner that implements best practicable control (e.g., by prescribing a hydraulic conductivity standard for pond liners of at least $1x10^{-6}$ cm/s).

Recall that HNI reportedly ranks among the top five almond processors in California and OFI is a Singapore-based global corporation that operates in 50 countries and has over 120 manufacturing facilities.[5] The area of Facility's unlined pond is only 0.16 acre (7,000 square feet). Accordingly, the Discharger should have sufficient financial resources to equip the pond with a liner meeting a $1x10^{-6}$ cm/s hydraulic conductivity standard within a relatively short period of time.

Further, recall that HNI has been conducting an authorized discharge to land probably since the facility was first constructed in 1983. The wastewater pond has been in existence since 2013. The cost savings realized by HNI by not having to pay annual discharge fees and conduct routine monitoring and reporting is likely substantial and represents an unfair economic advantage. Also, HNI's past and ongoing discharge has likely already unreasonably degraded and possibly polluted groundwater with waste constituents in the discharge and as a result of the discharge (i.e., decomposition byproducts including iron, manganese, arsenic as well as alkalinity and hardness, both contributors of salinity). The Discharger will threaten to violate the tentative order's discharge prohibitions regarding pollution immediately upon order adoption.

Comment 8: Please revise the tentative order to include (1) an accurate characterization of the current discharge to groundwater of wastewater impounded in the unlined pond, (2) a discharge specification establishing a hydraulic conductivity standard of $1x10^{-6}$ cm/s for all surface impoundments of nut processing wastewater, (3) a requirement to periodically monitor pond liner integrity (at least once every five years), and (4) a provision for establishing a compliance time schedule for the Discharger to equip the pond with a liner meeting the order's hydraulic conductivity standard. Revise the tentative order elsewhere as appropriate to reflect these changes.

Storm Water Discharge. Finding 30 indicates Facility storm water is discharged to an onsite storm water pond, "while the remaining portion is discharged to the Ward Canal," which is owned and operated by the Merced Irrigation District (MID). Finding 70 states, "All water associated with industrial activities at the facility is managed onsite in a storm

[5] https://www.olamgroup.com/about-olam/group-overview/olam-food-ingredients.html

water pond and the Discharger is working with MID to discharge the stormwater to the Ward Canal. Water associated with industrial activities will not be allowed to discharge off-site or into surface waters. "

Comment 9: Finding 30 indicates a portion of Facility storm water is discharged to the Ward Canal while Finding 70 indicates otherwise. Please clarify. Isn't Ward Canal considered a surface water? Isn't a discharge of storm water to Ward Canal an off-site discharge? Again, please clarify. Also, does the Ward Canal terminate or otherwise discharge to a surface water of the United States, or a tributary thereof?

Monitoring and Reporting Requirements. Because the discharge to the unlined pond has been ongoing for years and monitoring data submitted to date is variable due to small sample size, the proposed monthly frequency for monitoring wastewater impounded in the pond for cited waste constituents will not provide a sufficient sample size for data analysis within a reasonable amount of time to verify that the quality of wastewater disclosed in the tentative order is accurate. Also, the twice-yearly groundwater monitoring frequency means that a sufficient sample size (at least eight sampling events) will not be realized for four years.

Comment 10. Please revise the Monitoring and Reporting Program to increase pond monitoring frequency from monthly to twice monthly for EC, BOD5, Nitrate (as N), TKN, Total Nitrogen, TDS, and FDS. And, because the discharge appears to have elevated concentrations of dissolved iron and dissolved manganese, add these two constituents to the aforementioned suite of constituents. Also consider adding Sodium and Chloride to Table 3's constituents monitored annually in the Facility's source water, as it appears that wastewater generated from nut processing contains elevated concentrations of these two constituents. That way, staff can have the data necessary to monitor the incremental increase over source water of these two primary salt constituents in the discharge. Consider it a best practicable control measure.

Given that the discharge to the unlined pond has probably already unreasonably degraded groundwater, a sampling frequency of at least quarterly should be imposed and only reduced after three years to semi-annually provided the reduced frequency will still be representative of groundwater depth and quality.

Please inform your staff to contact me if they want to discuss my comments.

Jo Anne Kipps

JO ANNE KIPPS
RCE 49278