Kevin Buchan
Senior Manager
Bay Area Regulatory Affairs

November 26, 2023

Poornima Dixit
Senior Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

sent via email: ruledevelopment@baaqmd.gov

Re: WSPA Comments on Proposed Amendments to Regulation 8: Organic Compounds, Rule 8: Wastewater Collection and Separation Systems

Dear Ms. Dixit,

The Western States Petroleum Association (WSPA) is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California, Arizona, Nevada, Oregon, and Washington. Our members in the Bay Area have operations and facilities regulated by the Bay Area Air Quality Management District (BAAQMD or District).

WSPA provides the following comments on the proposed amendments to Regulation 8, Rule 8.

General Outreach

Section 8-8-110. The BAAQMD appears to be imposing additional conditions on non-refinery wastewater systems. Has the BAAQMD conducted the necessary outreach been conducted for non-refinery affected entities. It appears that through elimination this exemption many non-refinery wastewater separators throughout the Bay Area may now require controls. Affected sources were neither named in the Staff Report or Socioeconomic documents nor was the cost effectiveness analysis performed for sources affected by this change. H&S Code 40728.5(b)(1) requires that affected entities be described in the rule making documents.

Socioeconomic Analysis and Rule Compliance with State Health and Safety Code

The District is not complying with applicable rulemaking requirements in Sections 40727 through 40728.5 of the state's Health and Safety Code (H&SC or HSC). Specifically,

H&SC 40727(a) states that among other things, the board needs to make findings of necessity and clarity.

Necessity means that a need exists for the regulation "as demonstrated by the record". The sole reason given by the Staff Report is that the Bay Area is nonattainment for ozone, "*and further reductions [of] precursor organic compound emissions are needed for attainment and maintenance of the standards*". The District's own air monitoring data show that the monitors with the highest ozone concentrations and most exceedances--i.e., those that drive the nonattainment designation—are those in Livermore and the Santa Clara Valley, neither of which are impacted by refinery emissions. Ozone formation can be VOC- or NO_x-limited, however nothing in the record shows whether VOC reductions or NO_x reductions are what are needed to reduce the ozone formation.

The District's staff report states that "*The proposed amendments to Rule 8-8 are written so that their meaning can be easily understood by the persons directly affected by them*." WSPA disagrees. We have specifically detailed which aspects of the rule language are not easily understood in our June 7, 2023, comment letter, in our verbal comments to District staff on July 21, 2023, our e-mailed comments to staff on August 30, 2023 and in our comments below.

H&S Code §40727 requires that a regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it. The current draft Section 8-8-316 is ambiguous and does not meet the clarity requirement of H&S Code §40727.

H&SC 40727.2(c) requires that the District's rulemaking analysis "*shall compare the elements of each of the identified applicable federal air pollution control requirements to the corresponding element or elements of the district's proposed new or amended rule or regulation*", and 40727.2(e) states that if there are differences, the District's analysis shall notes those differences. The District's staff report makes only cursory mention of the applicable federal air pollution control regulations, with no such comparisons.

H&SC 40728.5 requires that the District's assessment of socioeconomic impacts address impacts to all businesses, including small businesses. The District's Staff Report and Socioeconomic Analysis instead focus on refineries, even though several of the rule changes—including the removal of the low-volume exemption at 8-8-110 and the change in the definition of "Total Organic Compounds" to include methane—also apply to non-refineries. This is particularly relevant given that controls that the District has commonly approved as BACT for oil-water separators (i.e., carbon drums) are known to not control methane well.

H&SC 40728.5(b)(5) requires the District to evaluate the emission reduction potential of the rule or regulation, which the District has not done.

H&SC §40728(b)(5) for Emission Reduction Potential. Under this H&S Code one element required for rulemaking to take place is that the emission reduction potential of the rule or regulation must be quantified. Within both the Staff Report and the Socioeconomic Impacts Analysis there appears to be no quantification of estimated emission reductions to be made from the proposed rule changes. Those estimated reductions should be quantified and published.

H&SC 40728.5(b)(6) requires that the District evaluate the necessity of amending the rule to attain ozone standards, which the District did not do.

HSC §40728.5(6) requires the BAAQMD to state the necessity of adopting or amending a regulation to attain state and federal ambient air standards. Based on the staff report, intensive sampling of the wastewater treatment system at refineries will build an emissions baseline.

While this sampling could assist with quantifying emissions, it does not contribute to attaining state and federal ambient air standards.

8-8-315 Requirements for Drains

Based on meetings with staff, WSPA's understanding is that the principal mitigation being mandated by this requirement is water seals/drain traps to prevent vapors from coming up from the wastewater collection system through drains, and that the requirement is triggered by a Method 21 survey finding a total organics concentration of 500 ppmvC_1 or more. The proposed requirement is more stringent than the current version of Regulation 8-8 because it proposes that the 500 ppmvC_1 threshold apply to organics <u>including</u> methane. The current rule applies the thresholds to organics <u>excluding</u> methane.

Vapor-tight drains can therefore be divided into two categories, those that are already equipped with seals/traps and those that are uncontrolled, but which have not historically had concentrations of 500 ppmvC_1 or more (based on the current semiannual monitoring requirements). Page 27 of the District's staff report states that "*In the case that an uncontrolled drain or other wastewater system component registers as a leak with a non-vapor tight reading of over 500 ppmv [expressed as methane], it is expected that facilities would take the appropriate steps to control this leak to comply with the proposed standards, including measures such as installing seals*". WSPA does not take issue with that statement.

However, WSPA is concerned that the proposed rule language is not consistent with the staff report language. Specifically, in the case of an uncontrolled drain/component where District inspectors find a reading of over 500 ppmv, Section 8-8-315.1 identifies that this "*shall constitute a violation of the Rule*" whether it is minimized and repaired in a timely manner or not, <u>and</u> requires it be "repaired" within 24 hours. It is unclear how an uncontrolled drain/component would be "repaired", given that it is not "broken".

The appropriate step to control the drain would be to install a seal/trap, which is often not going to be feasible within 24 hours. For consistency with the Staff Report—and keeping in mind the fact that readings are not always steady, sometimes due to conditions such as air entrainment (as is mentioned on page 13 of the Staff Report)—WSPA proposes the following changes to 8-8-315.1 (in strikeout):

> 315.1 All wastewater collection system components and wastewater separation system components shall be vapor-tight. Any component discovered ~~by the owner or operator~~ not to be vapor-tight shall be repaired or controlled in accordance with the schedule in Section 8-8-405~~. Any component discovered by the APCO not to be vapor-tight shall constitute a violation of this Rule and shall be repaired within 24 hours in accordance with Section 8-8-405.3~~; or

The staff report also recognizes that "*even with water seals installed in drains, emissions can be generated from volatile organic compound-containing liquid left standing in the water seal that was not flushed into the sewer line*" (p. 15). Accordingly, as WSPA pointed out in our comments on the draft rule, this means it is not appropriate to check for leaks while material is actively

being drained (or before there has been enough time to flush it). To address this concern, WSPA proposes that in Section 603, the following language be added:

> *"For drains, vapor-tightness needs to be assessed at a time when material is not actively being drained, and (in the case of water seals/traps) after a reasonable amount of time has passed to allow the water seal/trap to be flushed."*

8-8-316 Prohibition of "Non-Aqueous Phase Hydrocarbon Streams"

Rule 8-8 Staff Report vs. Rule language: Unintended consequences

The language in Section 8-8-316 does not reflect the interpretation BAAQMD made in its staff report. The staff report states that,

> "*This standard is intended to prohibit regular, programmatic, or significant discharges of non-aqueous hydrocarbon streams and free-phase organic liquid streams into the wastewater collection and treatment system. Air District staff understands that there may be instances in which drips or small spills of non-aqueous phase hydrocarbon streams may be discharged into drains or other wastewater system components. Should these discharges be observed by Air District enforcement staff, further monitoring or procedural review may take place to determine if the discharge is incidental or insignificant or if it requires enforcement action to be taken. For example, measurements with an FID may determine that an accidental discharge does not register over 500 ppmv [expressed as methane] and that the system therefore remains vapor tight. Any observed discharge that does not meet the requirements of Section 8-8-316 may be investigated to determine if facility procedures for sampling or other standard operating procedures dictate the regular, significant discharge of non-aqueous hydrocarbon or free-phase organic liquid into the wastewater collection and treatment system*."

WSPA does not take issue with the staff report language; however, the District's proposed *rule* language is different:

> *Prohibition of Discharge at Refineries: The owner or operator of a wastewater collection system component, separation system component or secondary treatment process component at a refinery shall not discharge non-aqueous phase hydrocarbon streams into wastewater collection system components and shall not discharge any free phase organic liquid streams into wastewater secondary treatment process components. The organic concentration in wastewater shall be determined by the methods specified in Section 8-8-605.*

A significant amount of refinery industry wastewater could be interpreted as meeting the definition of "non-aqueous phase hydrocarbon streams." There are several instances in which small amounts of hydrocarbons do need to get routed to drains. For example: pump leaks which

drip into a drain; a thermal relief safety system for a hydrocarbon pipe necessitates relief to a drain; and others.

BAAQMD current rules 8-18 and 8-28 contemplate these activities and have addressed those with highest emission risk. There are also surface residual runoff (parking lots, railroad cars, etc.), dock sumps (i.e., atmospheric sumps that dock loading arms drain to) that are monitored on the same frequency as drains and have a flame arrestor on their vents, active slot drains at hazardous waste pad areas, and slot drains used for when heat exchanger bundles are cleaned with high pressure water. The plain read of the District's language is that all these activities would be prohibited.

In addition, many discharges would be disallowed by the District's definition of "free phase organic liquid" and "non-aqueous phase hydrocarbon streams" because hydrocarbons typically do not mix well with water (and oil-water separators are designed to take advantage of this fact). Furthermore, during the treatment process 'dissolved' hydrocarbons can sometimes come out of solution under certain conditions.

Cost Effectiveness

The cost effectiveness review did not include costs for piping all potential thermal relief and seal drips into a new system.

Contradiction between Section 8-8-316 and California/Federal Pollution Prevention Laws

Section 8-8-316 as written would prohibit Refineries from taking advantage of the California exemption for managing oily waste to recover hydrocarbons (H&SC 25143.2(d)(2)(C). The CA version of this limited exemption mirrors the Federal exemption (40 CFR 261.4(a)(12) and was created so that Refineries would be able to minimize overall wastes by capturing and recycling hydrocarbons – either in mostly hydrocarbon (HC) form, or as small amounts present in wastewaters. The proposed Section 8-8-204 definition of,

> *Free Phase Organic Liquid. A term to describe hydrocarbon liquid, that is present as a discrete liquid phase, rather than dissolved in the wastewater phase, commonly floating on the water and visible at the surface*",

appears to prohibit recovery of hydrocarbons as it could be strictly interpreted to include aqueous solutions that have a visible sheen or emulsification of oil on top. Most of the aqueous solutions with recoverable hydrocarbons that are managed will have exactly that, a sheen or visible surface presence. This small amount of free oil is what API Separators are designed to manage. As such, Section 8-8-316 has the potential to end the recovery of HC from HC-bearing aqueous solutions, resulting in a large volume of liquid that would need to be disposed as hazardous waste offsite rather than recycled onsite.

Conflict exists between Section 8-8-316 and Federal SPCC regulations.

Federal SPCC Regulations require facilities to provide containment for equipment containing hydrocarbons, also known 'general containment'. This presents an issue with the proposed

language in Section 8-8-316 that states "*The owner or operator of a wastewater collection system component, separation system component or secondary treatment process component at a refinery shall not discharge non-aqueous phase hydrocarbon streams into wastewater collection system components.*"

Specifically, SPCC regulations provide that onshore facility own/operators must:

40 cfr 112.8(a) "Meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed in this section."

40 cfr 112.8(b) 'Facility Drainage' (1) "Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged."

40 cfr 112.8(b) 'Facility Drainage' (3) "Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding."

The EPA guidance document '*SPCC Guidance for Regional Inspectors* ver. December 16, 2013 pg. 4-8 confirms that EPA intends that oil/water separator units comprise a portion of SPCC secondary containment systems. The guidance states (**emphasis** added) "*Section 112.7(c) lists several methods of providing secondary containment, which are described in Table 4-2. These methods are examples only; other containment methods may be used, consistent with good engineering practice.* ***For example, a facility could use an oil/water separator, combined with a drainage system, to collect and retain discharges of oil within the facility***."

Proposed rule language changes

Accordingly, WSPA is proposing the following language for that section instead:

> 8-8-316 Prohibition of Discharge at Refineries: *The owner or operator of a wastewater collection system component, separation system component or secondary treatment process component at a refinery shall not programmatically or during normal operation discharge non-aqueous phase hydrocarbon streams into wastewater collection system components downstream of the API separator and shall not directly discharge any free phase organic liquid streams into wastewater secondary treatment process components. An accidental or incidental release of non-aqueous phase hydrocarbon or free phase organic liquid to the sewer or wastewater secondary treatment process is not programmatic or normal operation. The organic concentration in wastewater shall be determined by the methods specified in Section 8-8-605.*

With regard to the definition of “free phase organic liquid” [8-8-204], WSPA suggests that the District’s proposed definition in 8-8-204 be revised to simply refer to “hydrocarbon liquid, that is present as a discrete liquid phase” (i.e., delete the subsequent text).

With regard to the definition of “non-aqueous phase hydrocarbon stream” [8-8-212], WSPA suggests that the proposed definition in 8-8-212 be revised from

> “*organic liquids not dissolved in, or mixed with, wastewater*”

to:

> “*organic liquids not dissolved in, or mixed with, or floating on top of wastewater*”.

8-8-507 Wastewater Organic Concentration Monitoring at Refineries

Per BAAQMD’s staff report, this monitoring requirement was written to establish a baseline and provide a better understanding of the emissions potential from secondary treatment systems at refineries:

> “The proposed amendments provide detailed monitoring requirements for wastewater at the inlet to oil-water separators, at the inlet to secondary treatment, and at the outlet of secondary treatment. Monitoring shall be monthly for the first 6 months after adoption to establish a baseline, and quarterly thereafter to provide a better understanding of the emissions potential from secondary treatment systems at refineries.”

WSPA requests that this study be performed outside of regulation as the sampling is intensive, costly, and often a duplicate of testing required under each site’s NPDES permit. HSC §40728.5(6) requires an air district to state the necessity of adopting or amending a regulation to attain state and federal ambient air standards. Based on the staff report, intensive sampling of the wastewater treatment system at refineries will build an emissions baseline. While this sampling could assist with quantifying emissions, it does not contribute to attaining state and federal ambient air standards.

The District’s proposed rule language reads as follows:

> “The owner or operator of wastewater separation system components or secondary treatment processes at a refinery shall monitor the concentrations of oil and grease, total organic carbon, and volatile and semi-volatile organic compounds in wastewater along with total wastewater flowrate at the inlet to oil-water separators, inlet to secondary treatment system, and outlet of secondary treatment system. Monitoring shall be conducted on the following frequency:
>
> 507.1 Effective XXXX (date of rule adoption) until YYYY (6 months after rule adoption date), at least once every 30 days.

507.2 Effective YYYY (6 months after rule adoption date), at least once every 90 days."

WSPA proposes that the District either remove section 507 entirely or revise as follows:

"The owner or operator of wastewater separation system components or secondary treatment processes at a refinery shall monitor the concentrations of oil and grease, total organic carbon, and volatile and semi-volatile organic compounds in wastewater along with total wastewater flowrate at the inlet to oil-water separators, inlet to secondary treatment system, and outlet of secondary treatment system. Monitoring shall be conducted on the following frequency:

507.1 Effective XXXX (date of rule adoption) until YYYY (6 months after rule adoption date), at least once every 30 days.

507.2 Effective YYYY (6 months after rule adoption date) until YYYY (1 year after date of rule adoption), at least once every 90 days."

507.3 Effective two (2) years after the adoption of the rule, the sampling requirements for refineries in section 507 will sunset.

Compliance Timeframe

Should existing control systems be insufficient to ensure compliance with rule amendments and/or if any new systems need to be put in place, the draft rule amendments do not identify a compliance timeframe. The reasonableness of any potential compliance timeframe depends on the extent of equipment needed. Should new equipment be necessary, time is needed to plan, budget, permit, and safely install the equipment into the facility's operations. WSPA is requesting a compliance timeline of 3 to 5 year(s) from the time that the District issues the requisite preconstruction permit for the equipment.

Sampling and Testing

Section 8-8-504

The District's proposed language requires detectors that have "been approved by the APCO". WSPA requests staff provide which ones has the APCO approved, and what is the process/criteria and timeline for approval. In addition, while the leak standard is 500 ppmv as methane, page 21 of the staff report mentions that facilities can use PIDs (which don't detect methane), but District inspectors have previously issued NOVs to people using PIDs to evaluate compliance with standards expressed "as methane". We request staff to clarify the apparent discrepancy.

Section 8-8-506

Annual source testing is burdensome and unnecessary and/or a surrogate like temperature monitoring should be allowed. Once the design is certified and initial source test completed, the data is used to estimate emissions.

Section 8-8-507

Given the relative unfamiliarity that refineries have with at least some of the Section 8-8-605 methods, it is not feasible to implement sampling on the date that the rule is adopted as identified in Section 8-8-507. WSPA requests that all the dates identified in -507.1 and -507.2 be pushed back one year to allow time for laboratory evaluation/bidding/contracting and personnel training.

In addition, WSPA proposes that the following language be added after 8-8-507.2:

> 507.3 After eight quarterly samples have been obtained from wastewater separation system components or secondary treatment processes, the owner and/or operator of a wastewater separation system components or secondary treatment processes may submit a request to the APCO for a decreased monitoring frequency.

Section 8-8-601 Clarification

In our meeting, staff mentioned that the scope of testing in Section 8-8-601 applied to facilities who were interested in the limited exemption in 8-8-113.2. As currently worded, 8-8-601 does not identify that intent. To clarify the District's stated intent, WSPA proposes that the language of 8-8-601 be revised (in underline/strikeout) below:

> *"Samples of wastewater as specified in this Rule shall be taken at the influent for each wastewater collection system and wastewater separation system unit seeking an exemption under 8-8-113.2 and analyzed for the …*"

Methane Inclusion

While there has not been any indication or study showing that methane from wastewater collection systems or aerobic treatment systems is significant enough to warrant quantification, carbon adsorption systems that the District has previously approved (and in some cases specified) for controlling hydrocarbon vapors do not control methane.

Therefore, there could potentially be some instances where these systems achieve 95% control of non-methane hydrocarbons but do not comply with the requirement for 95% control of total organic carbon. Wastewater systems would need to retrofit vapor controls to include an incineration system with associated assist gas. It is pertinent to highlight that this is an unintended consequence of such rule change, as it would likely not be cost-effective for the relative emissions reduction. It would certainly increase GHG emissions in the form of CO2 from the addition of assist gas and cause the wastewater systems to pull more recoverable total

organic compounds to the vapor phase rather than recovering them and recycling them back to the recovered oil system.

WSPA proposes that the following sentence be added to Section 8-8-315.2:

> "*In cases where existing controls (including but not limited to carbon adsorption systems) do not meet the 95% destruction efficiency requirement solely because of methane, retrofits will only be required to the extent that they actually reduce GHG overall and are shown to be cost-effective*."

Test Methods

The District outlined several test methods in Sections 8-8-601 and -605. Although these sections allow for alternative methods "*determined to be equivalent by the EPA and approved by the APCO*" [underline added], EPA makes relatively few determinations of method equivalency and often may take years to do so. Given that methods often change for good reasons, WSPA requests that the District replace the "and" with an "or". In addition, we have the following questions about the specific methods.

Section 8-8-605.1. The District has specified EPA Method 1664A; is there any reason why the more recent 1664B (which was approved in 2010) was excluded?

Section 8-8-605.2. Method SM 5310D is specified in this section, and while that method is listed by the National Environmental Methods Index (NEMI), NEMI identifies that "*The method is not suitable for the determination of volatile organic constituents*"[1] and cites Standard Methods Online, which in turn notes that one of the major changes since 2012 is that "*The Wet-Oxidation Method (5310D) was dropped from this edition*."[2] Similarly, a recent EPA Federal Register notice regarding methods also mentions only 5310B and 5310C without mentioning 5310D.[3]

BAAQMD MOP Test Methods

Section 8-8-604. This section refers to the BAAQMD Manual of Procedures, Volume IV, ST-7. Industry is finding that BAAQMD is leaning away from some of the historic MOP procedures. We are uncertain whether the source testing group would approve this method for abatement efficiency determination. It would be beneficial to provide flexibility in this section such as narrative proposed below.

> 8-8-604 Determination of Abatement Efficiency: Abatement efficiency of an abatement device as specified in Section 8-8-506 shall be determined as prescribed in the Manual of Procedures, Volume IV, ST-7 or through another method that BAAQMD approves as part of the source test protocol submittal process.

[1] NEMI Method Summary - 5310 D, "Scope and Application" section.
[2] https://www.standardmethods.org/action/doSearch?AllField=5310d&ConceptID=
[3] https://www.govinfo.gov/content/pkg/FR-2021-05-19/pdf/2021-09596.pdf

WSPA appreciates the opportunity to provide comments on this important matter, and looks forward to responses by staff.

Sincerely,