Responses to Comments on Rule 12-16

Comments from Individuals

Individual Comments of Support for Rule 12-16:

Twenty-three (23) individuals from many locations in the Bay Area wrote to support adoption of Rule 12-16. Some of the reasons for support include: fighting climate change, prevention of large increases in refining of Canadian "tar sands" crude oil, does not unduly limit refinery operations since the cap is set higher than current emissions, would avoid increases in health impacts on the community associated with processing "dirtier" crude sources, the Bay Area is tied for 6th place worst particulate matter pollution – according to the American Lung Association, Californians should lead by example in addressing carbon emissions, refinery emissions are a health burden in communities of color, need to establish overall emissions caps on refineries.
Some of these comments in support of Rule 12-16 also expressed concern that the staff opposed the Rule.

One individual commented in support of greater control on refinery emissions, but opposed Rule 12-16 as being too lenient.

Staff Response:
Staff shares the concerns expressed in these emails. However, as explained in the Staff Report, there are concerns about the legal defensibility and unintended impacts of Rule 12-16, as currently drafted in accordance with the policy vision developed by CBE and their associates. Staff believes that there are better, more defensible and more effective methods to accomplish the goals of Rule 12-16 and address the concerns detailed in these emails.

Increasing PM and GHGs Trends

Comment: According to the Air District's own data and in contrast to some other pollutant emissions, both particulate matter emissions and greenhouse gasses from Bay Area refineries have increased significantly over the past several decades, in contrast to some other pollutants.
C. Davidson

Staff Response:
Air District staff does agree with this comment. There is no evidence that refinery GHG and PM emissions are increasing.

Loopholes in Rule 13-1

Comment: Rule 13-1's first potential GHG loophole regards the highly variable diluting of very heavy oils with much lighter solvent oils to obtain a much lighter, more liquid and more "workable refinery blend" which would still require very high-GHG processing, but remain just below the per barrel limit. The case-in-point regards refineries developing new capacity to refine bitumen as feedstock, which is an extremely high-sulfur, semi-solid non-conventional oil. So by

dilution, a refinery could still process large amounts bitumen and yet, remain under almost any per barrel GHG limit.

C. Davidson

Staff Response:
The commenter has provided no information that would support the claim the refineries would opt to blend heavy oils with much lighter solvent oils and that the resulting product, diluted bitumen (DilBit) would always meet the carbon intensity limits contained in Rule 13-1 and result in greater emissions of various pollutants.

Comment: The second GHG loophole for Rule 13-1 is to first separate the heaviest oil fractions out of DilBit, by distillation at one facility and then further process this semi-refined, heaviest fraction of bitumen at a second facility. In fact, from anywhere in the world, partially refined or pre-processed extra heavy bottom oils, from tar sands or otherwise, could be diluted significantly to below any per barrel limit and then delivered by ship to any local area refinery.

C. Davidson

Staff Response: The scenario outline in this comment could also act as a basis to ensure compliance with Rule 12-16 in its current form. Refiners could preprocess crude at refineries outside of the Air District to be finished at a Bay Area refinery, thus reducing the refineries' over all GHG emissions and, therefore, ensure compliance with the GHG emissions of 12-16 through displacement of the GHG emissions associated with the initial steps of crude refinement.

Comment: The third major GHG loophole in Rule 13-1 regards the questionable status quo of having, as undisclosed and proprietary, major chemical constituents of crude feedstocks that markedly distinguish the various quality types of crude oils that create the varieties of processing required and the levels of emissions produced. In the case of DilBit, the asphalt content is both the primary constituent fraction of bitumen and the primary cause of bitumen being the most GHG-intensive to refine into gasoline.

C. Davidson

Staff Response: As currently drafted, Rule 13-1 is agnostic regarding the characteristic of the crude oils processed. While the quality of the crude would may impact refinery emissions, for determining compliance, the rule would rely on the volume of crude or other input relative to the amount of GHGs emitting from the refinery and other associated processes.

Comment: Air District's fourth stationary source GHG loophole now exists. Not directly related to Rule 13-1, but to Rule 12-16, the fourth loophole to refinery-wide GHG limits is Air District's recently proposed Draft 2017 Clean Air Plan. The Plan includes a Stationary Source Control Measure SS 12, which would establish Petroleum Refining Climate Impacts Limit, ostensibly, to limit facility-wide carbon intensity. According to the plan, if carbon intensity "limits" were exceeded, a scheme is provided to "offset" the increase in carbon intensity through the "Low Carbon Fuel Standard (LCFS) framework." Since the LCFS framework includes credits for biofuels production, the offset would allow increased biofuel production to offset increased carbon intensity from processing tar sands.

C. Davidson

Staff Response: That measure has been updated in the Clean Air Plan. The current draft of Rule 13-1 does not allow for the purchases of offsets through the LCFS framework.

Rule 12-16 Is a No-Cost Proposal

Comment: Finally, I am curious why BAAQMD District Counsel Brian Bunger would have articulated strongly, in the recent past, that Rule 12-16, the refinery-wide emissions limit is "arbitrary and capricious", but not Rule 13-1, the per barrel limit? Yet, just this week, CARB's executive director has affirmatively clarified the legality of Rule 12-16 and 13-1 by stating clearly:

> "With regard to the District's draft Regulation 12, Rule 16, limiting emissions increases from refineries, and the new concept of Regulation 13, Rule 1, establishing a carbon intensity cap for refineries [C.D.: i.e., a per barrel CO2/GHG emissions cap], we agree that both the approaches could help to ensure that these sources do not add to the state's overall emissions of greenhouse gasses and criteria or toxic pollutants." (5)

I am not opposed to Rule 13-1, the per barrel emissions limit, but believe that Rule 12-16's refinery-wide GHG and criteria emissions limits 1) need not hamper profitable refinery operations; 2) nor produce jobs loss; 3) nor require each refinery to reverse long-standing proprietary policies on crude chemistry information. Importantly, Rule 12-16 greatly needs rapid adoption after four years and it should ultimately make for safer refineries and communities.

C. Davidson

Staff Response: Staff disagrees that Rule 12-16 offers a no-cost option for limiting GHG emissions. It is reasonable to assume that at some point a refinery's emissions may be on the verge of exceeding or exceed its emission limits for any one of the pollutants addressed by Rule 12-16; if this potentiality were not the case, there would be no need for Rule 12-16. In evaluating this potential, staff determined that there were three scenarios under which adverse environmental impact could occur—the installation a selective catalytic reduction (SCR) unit to control NOx emissions and the installation and operation of a wet gas scrubber to control SO2 emissions. The socioeconomic impact analysis (summarized in the Staff Report) found that compliance with Rule 12-16 by installing a wet gas scrubber could cost as much as $10,999,872 for the equipment, and $1,818,374 in annual operating cost.

Individual Comments in Opposition to Rule 12-16:

CJN

I believe in smart, scientifically-based regulation that provides real emissions reductions. I fear that these rules are being rushed through the rule making process without proper thoughtfulness and consideration leaving many environmentalists, community members, and industry workers confused about the real value to Bay Area citizens.

Staff Response: Rule 12-16 has been in development for more than 1 year, with adequate time for input and comment from all affected parties.

12-16 is narrow-sighted and fails to consider the larger issues of greenhouse gas pollution such as leakage and consumer energy needs.

Staff Response: Rule 12-16 provides +7% increase in emissions from each refinery's highest annual emissions during the baseline period from 2010 – 2015, and is likely adequate to supply the Bay Area's current transportation fuel needs. Future needs are uncertain, as population growth is anticipated to be offset by increased use of mass transit, improved fuel economy, and more alternate fuel vehicles. Projections by the Energy Information Administration indicate total transportation fuels are expected to peak at approximately 7% above the baseline period in 2018, at a level 4% less than the peak fuel demand in 2007.

Note that the final proposed version of Rule 12-16 specifies GHG limits that are higher than in the May 31st version of the rule. These higher limits are designed, in part, to ensure that the rule does not prevent Bay Area refineries from being able to meet current and projected growth in demand for California transportation fuels.

Refineries are already subject to permit limits, caps, emissions limits, and emissions concentration limits.

Staff Response: The Air District agrees that source permit limits and emissions limits are very effective. However, some refinery process units are "grandfathered" and do not have specific permit limits. Changes in operation could lead to higher emissions from those specific grandfathered units.

K M -

Why is the BAAQMD trying to make this regulation law when it is clear that the District believes it will not have an impact on air quality in the Bay Area?

Staff Response: Rule 12-16 is intended to prevent future increases in air emissions, rather than reduce existing air emissions.

Do the Refinery 2010-2014 baselines (table 12-16-301 and 302) take into account the Refineries not operating at full capacity during certain years (i.e. because of equipment failure, large turnarounds, etc.), and if not, can you propose a new baseline that would include this analysis?

Staff Response: Rule 12-16 proposes using the highest annual emissions during the baseline period of 2010 – 2015, plus 7% as the limit for each criteria pollutant and for GHG emissions.

The GHG limits in the final proposed rule provide for an extra buffer in order to account for future demand growth and to accommodate the full utilization of recently permitted improvements to the refineries. These changes together should address the commenter's concern.

P V -

This commenter wrote to oppose any regulation of CO_2, expressing concern about impacts on gasoline prices. He also expressed concern about the rule increasing net GHG emissions due to production constraints in the Bay Area leading to production elsewhere and shipping emissions. He asked the Air District to focus on more traditional pollutants.

Staff Response: CO_2 is an air pollutant whose impacts are felt globally. Controls are needed everywhere to prevent severe impacts from climate change. The Air District has set aggressive goals to reduce local GHG pollution and some local rulemaking will be required to meet those goals.

Comments from Organizations

California Air Resources Board

Regarding 12-16 and 13-1, we agree that both approaches could help ensure no increases of pollutants. We recommend establishing an industrial source action committee within the California Air Pollution Control Officers' Association, with an initial focus on refineries.

Staff Response: The Air District looks forward to working with CARB through an industrial source action committee of CAPCOA.

Citizens Against Pollution, Peninsula Interfaith Climate Action

These groups commented in support of Rule 12-16 for reasons like those expressed by individuals supporting the rule.

Staff Response: As mentioned above, staff shares the commenters' concerns about the impact of air pollution from refineries. However, we are concerned about the legal defensibility and effectiveness of the policy recommended by CBE and their associates.

National Resources Defense Council

In its staff report for Regulation 12, Rule 16 BAAQMD focuses on two potential mechanisms for reducing greenhouse gas (GHG) and criteria emissions: (1) installation of wet gas scrubbers in facilities operating fluidized catalytic cracking units (FCCU); and (2) limiting refinery production. These are not the only mechanisms available to limit refinery emissions and to fully inform the public, BAAQMD's discussion and evaluation of Regulation 12, Rule 16 should reflect the full range of emissions reductions mechanisms available.

There are a number of options for reducing refinery GHG and criteria emissions, which include shifting to sweeter and cleaner crude feedstocks and curtailing production. However, refineries can also undertake energy efficiency improvements or equipment upgrades, independent of wet gas scrubbers, which have the potential to greatly reduce refinery emissions and would not require cuts in refinery production.

Staff Response: The staff's socioeconomic and CEQA analysis focused on these two potential responses to the limits in Rule 12-16 because these responses are the most environmentally and economically impactful mechanisms that the refineries might employ to address the rule.

NRDC has also analyzed various studies showing that energy efficiency measures can reduce refinery carbon dioxide emissions in a cost-effective manner. According to McKinsey and Co., the refining industry could reduce energy use 13% by 2020 through commercially available technologies, and at an internal rate of return of at least 10%. Energetics Incorporated found that technical potential was as high as 26%, if best practices and state-of-the-art technologies are used.

Staff Response: Each refinery submitted a list of refinery-specific energy improvement projects to the California Air Resources Board in response to the California Regulation for Energy Efficiency and Co-Benefits Assessment of Large Industrial Facilities in late 2011. Review of those range of energy improvement projects finds that projects with simple payback within 10 years results in emissions benefits for particular refineries of 0.02% to 4.02% if all projects are implemented and achieve the expected results. The emission reduction potential shown in the NRDC's more general studies may not be achievable at the specific refineries in the Bay Area.

United Steelworkers (USW)

United Steelworkers (USW) District 12 is writing you to offer updated comments on Draft Regulation 12-16, which are currently under consideration by the Bay Area Air Quality Management District (BAAQMD). While we strongly support action to reduce greenhouse gases (GHGs) and emissions of criteria pollutants and toxic air contaminants (TACs) that can harm workers and communities, we continue to have unanswered questions about rule 12-16. We therefore respectively urge the board to postpone a decision on this draft rule – beyond the current May 31 meeting date – until our concerns are adequately addressed.

Our fundamental questions concern a) whether local emission caps on GHGs at refineries will have the intended impact of reducing emissions of GHGs overall; b) whether those same caps are an effective method for reducing the emissions of criteria pollutants and TACs, which are a primary cause of negative health impacts on public and worker health; and c) whether the rule will cause refiners to rely more heavily on imported fuels, if they are prohibited from growing their business in California – resulting in a larger GHG footprint for California's fuels; higher fuel prices that will be felt most directly by lower income residents; reduced ability of the California fuel supply to respond quickly in the event of a refinery failure or upset; and job loss at refineries and all the local businesses that are part of the same economic ecosystem.

Staff Response:

a) *The economic impacts of the rule are uncertain and depend on whether the consumption of transportation fuels declines, as predicted by the California Air Resources Board (CARB), or increases as it has been doing since 2012.*

   Note that the GHG limits in the rule were increased in order to accommodate projected demand growth. This should ensure that the rule will not prevent Bay Area refineries from meeting the demand for California transportation fuels.

b) *GHG emissions are correlated to criteria pollutant and TAC emissions, validated by Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities: Initial Report from CalEPA Office of Health Hazards Assessment, February 2017*
c) *Rule 12-16 proposes using the highest annual emissions during the baseline period of 2010 – 2015, plus 7% as the limit for each criteria pollutant and for GHG emissions. These limits should provide adequate capacity to supply current transportation fuels needed in the Bay Area.*

Until we can predict with some measure of certainty that rule 12-16 will not increase the import of fuels with a greater carbon footprint and thus send us in the wrong direction on GHG reduction, and until we can say with certainty that it will significantly improve the health of local residents in refinery communities, we urge the board to table this rulemaking.

We are continuing to analyze Rule 12-16; however, in light of what we have learned thus far, we are urging the Board to postpone its decision, now slated for May 31, based on the following unanswered questions:

1) What will be the impact on worker and community health?
The Rule does not address criteria pollutants or TACs, which are important for both worker and community health. For refineries, these include diesel particulate matter from diesel-fired equipment, benzene from process leaks, 1,3-butadiene and others. We believe an emissions rule should include both criteria pollutants and TACs, in addition to GHGs.

Staff Response: It is correct that Rule 12-16 does not include Toxic Air Contaminants (TACs). The staff believes that these contaminants are best addressed in a risk-based rule and we are developing Rule 11-18 for that purpose. That rule will cap toxic risk from refineries and other sources all over the Bay Area.

2) Is there evidence of co-benefits at the specific refineries covered by the proposed rule?
It is not clear to us that, in this case, that placing caps on GHGs would have the co-benefit of also reducing criteria pollutants and TACs. The pollution control technologies to capture particulate matter, for example, differ from those that are designed to capture volatile organic compounds (VOCs), such as 1,3-butadiene and others. It is also not clear to us that BAAQMD could regulate emissions based on the theory that doing so would provide indirect co-benefits to health.

Furthermore, the BAAQMD's own October 2016 staff report (page 20) raised significant questions about the efficacy of co-benefits when applied to specific Bay Area refineries.

Staff Response: As stated in the staff reports, rules need to be justified for their own results, rather than for co-benefits. That said, GHG emissions are correlated to criteria pollutant and TAC emissions, validated by Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities: Initial Report from CalEPA Office of Health Hazards Assessment, February 2017, and by A PRELIMINARY ENVIRONMENTAL EQUITY ASSESSMENT OF CALIFORNIA'S CAP-AND-TRADE PROGRAM. However, since many of these correlated pollutants are emitted from tall, hot stacks, the pollution usually lofts over the

nearby community and contributes to regional, rather than localized pollution. A risk-based analysis is a better way to protect local communities.

3) Will capping GHGs at refineries align with the state's cap-and-trade program?
It is not clear to us how capping GHGs from individual sources can be consistent with both the theory and operation of the state's cap-and-trade policies under Health and Safety Code §40727. Shouldn't this also be resolved before proceeding with this Rule? We recognize that the California Air Resources Board recently weighed in with a suggestion that CARB and BAAQMD work together to ensure Rule 12-16, Rule 13-01 and CARB regulations are complementary. CARB suggested establishing an "industrial source action committee" within the California Air Pollution Control Officers' Association. We support this proposed structure so that the BAAQMD and ARB can together and take the necessary time to figure out how various approaches might work – or not work – together and alone. As noted above, the USW will gladly participate in such a committee.

Staff Response: CARB has commented that Rule 12-16 (and 13-1) could help ensure no increases of pollutants. The Air District looks forward to working with CARB through an industrial source action committee of CAPCOA.

4) Would the cap proposed under Rule 12-16 conflict with the occasional need for refineries to increase capacity due to a failure in the system?
This is a unique requirement in California because the state is isolated by time and distance from other sources of transportation fuels and is therefore nearly self-sufficient in fuel production. Imports make up only between three and six percent of total statewide supply for the 15 billion gallons of gasoline consumed each year. Total statewide gasoline demand rose 3.9 percent between 2013-2015.

California is able to shift production capacity internally when needed. Following the February 2015 Exxon Mobil explosion, which took that refinery off line, Bay Area refineries went from supplying about 45 percent of the state's gasoline to supplying about 60 percent, an increase of 33 percent. This required an increase in output from two million barrels per week to about 3.2 million barrels per week. The capacity of the Bay Area's refineries to expand was an important factor in mitigating the negative economic impact of the Exxon incident, which a 2015 RAND analysis concluded caused a $6.9 billion contraction in the state's economy.

Would Rule 12-16 trigger a violation if a refinery increased their output in response to a supply failure?

Staff Response: Rule 12-16 proposes using the highest annual emissions during the baseline period of 2010 – 2015, plus 7% as the limit for each criteria pollutant and for GHG emissions. These limits should provide adequate capacity to supply current transportation fuels needed in the Bay Area. After consideration of comments on this issue, a provision has been added to the rule to address these types of scenarios.

5) Will Rule 12-16 result in GHG "leakage" and higher gasoline prices?
In the wake of the Exxon explosion, imported gasoline from foreign sources rose from meeting about three percent of total statewide demand to about eight percent of demand, or from about

140,000 barrel per week to 420,000 barrels per day. This represented an increase of 42 percent in total imported gasoline statewide.

In light of the 3.9 percent growth in statewide gasoline demand between 2013-15, as well as the potential for system failures, could Rule 12-16 lead to an increase in imported gasoline, both continuously and episodically, as refineries find it impossible to increase production?

Would this imported gasoline come with a larger GHG footprint for refining and transportation, thereby defeating the purpose of Rule 12-16 to reduce GHGs? Would the higher costs associated with importing gasoline into California be passed along to the public, where it would be felt most immediately among lower income residents?

We believe the possibility of "GHG leakage," whereby carbon and other GHGs are simply moved from one regulated location (in this case the Bay Area) to a less regulated location, should be investigated as a potential unintended consequence of this rule before it is subject to further actions by the Board.

Staff Response: The economic impacts of the rule are uncertain and depend on whether the consumption of transportation fuels declines, as predicted by the California Air Resources Board (CARB), or increases as it has been doing since 2012. Rule 12-16 provides +7% increase in emissions and production capacity from each refinery's highest annual emissions during the baseline period from 2010 – 2015, and is adequate to supply the Bay Area's current transportation fuel needs. Future needs are uncertain, as population growth is anticipated to be offset by increased use of mass transit, improved fuel economy, and more alternate fuel vehicles. Projections by the Energy Information Administration indicate total transportation fuels are expected to peak at approximately 7% above the baseline period in 2018, at a level 4% less than the peak fuel demand in 2007.

Note that the GHG limits in the final proposed rule were increased in order to accommodate projected demand growth. This should ensure that the rule will not prevent Bay Area refineries from meeting the demand for California transportation fuels. In addition, a provision was added to the rule to address long-term, unplanned refinery outages that significantly impact the California transportation fuel market.

Moreover, we recognize that 12-16 could impede the ability of any of the state's refineries to expand, even if the expansion would be necessary to produce transportation fuels with lower carbon intensity. To meet its GHG objectives by 2020, California must be able to take every step to reduce the carbon intensity of transportation fuels, since this sector is by far the largest emitter of GHGs each year. If a refinery expansion could meet the state's need for lower-carbon fuels, why would the District implement rules that would prohibit such an expansion?

Staff Response: Refinery expansion and modifications may continue to occur through Regulation 2, Rule 2: New Source Review. However, any increase in air emissions must be off-set within the refinery. This represents a significant deviation from the current new source review requirements.

The revised, proposed version of Rule 12-16 provides for higher GHG limits and eliminates the criteria pollutant limits. Staff believes that these changes address concerns about interference with News Source Review permitting.

Western States Petroleum Association (WSPA)
Attachment A: WSPA Legal Comments on Proposed Rule 12-16

As the District is aware, WSPA submitted comments on the District's Project Description for Rule 12-16 on September 9, 2016, and on the District's Proposed Draft Rule 12-16 on December 2, 2016. WSPA continues to have significant concerns with the conceptual goal of Rule 12-16 and with the practical implementation of the rule's provisions. In general, WSPA agrees with District Staff's assessment that Rule 12-16 would not withstand judicial scrutiny. Proposed Rule 12-16 is inconsistent with existing federal and state air programs, would not be in harmony with the state cap and trade program for greenhouse gas emissions, arbitrarily limits specific refinery emissions to levels that are not necessary to protect local communities, and is beyond the District's statutory authority.

Staff Response: Air District staff does not recommend Rule 12-16 as proposed by CBE and their associates because of the legal concerns expressed in the staff report.

The revised, proposed version of Rule 12-16 provides for higher GHG limits and eliminates the criteria pollutant limits. Staff believes that these changes address legal concerns about the rule.

WSPA has submitted multiple letters and sets of comments to the District discussing its concerns over the legality of imposing numeric caps on emissions of GHGs, PM_{10}, $PM_{2.5}$, NO_X, and SO_2 from petroleum refineries. WSPA summarizes its concerns here, and incorporates by reference its past comment letters on Rule 12-16.1

The Board Cannot Adopt Rule 12-16 Without Making the Six Statutory Findings Required under the California Health and Safety Code

Prior to adopting a new or amended rule, the District must make six statutory findings: necessity; authority; clarity; consistency; non-duplication; and reference. Cal. Health & Safety Code § 40727. The Staff Report to Rule 12-16 was prepared "[a]t the direction of the Board … to provide an assessment of the rule's consistency with the Air District's statutory authority." Staff Report, at 5. The Staff Report fails to make these required findings; in fact, it cannot, because District Staff have concluded that adoption of Rule 12-16 would likely be beyond the Air District's authority and/or arbitrary and capricious. See Staff Report, at 39. Assuming that the Board is considering Rule 12-16 for adoption, the Board cannot adopt proposed Rule 12-16 without first demonstrating that the rule is within the District's authority, and providing an opportunity for public review and comment on that analysis. See id. § 40727.2(a) & (i).

Staff Response: These required findings are addressed in the final version of the Staff Report.

Numeric Emissions Caps are Not Necessary

The numeric emissions caps under proposed Rule 12-16 are not necessary to protect public health or to address an existing air quality concern in the Bay Area. Emissions of GHGs, PM_{10},

$PM_{2.5}$, NO_X, and SO_2 are already extensively regulated at the federal, state, and local level. As the Staff Report explains, these rules apply standards "that ensure emissions are effectively controlled." Staff Report, at 13. Further, the broad range of air quality regulations that have been adopted by the District, California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (EPA) were designed to ensure that emissions decrease over time and air quality improves. And indeed, existing ambient monitoring data and emissions inventories demonstrate just that: there have been consistent decreases in emissions and improvement in air quality in the Bay Area. See, e.g., Staff Report, at 14 ("mass emissions generally have been substantially reduced over the past several decades").

Proposed Rule 12-16 does not address any *current* emissions problem. Rather, it is rooted in the *possibility* that refinery emissions will increase in the future based on an assumption that changes in crude oil sources (from traditional sources to heavier sources requiring more intensive processing) will affect refinery emissions. See Staff Report, at 9-10 ("The intent of Rule 12-16 is to discourage or prevent refineries in the Bay Area from making changes that would lead to increases in emissions of certain pollutants"). WSPA and its members have repeatedly pointed out in prior comment letters that the possibility that new sources of crude oil will result in increased emissions is not supported by the facts, because, as the Staff Report briefly mentions, each refinery is designed to process a certain range of crude oil feedstocks, and its emissions from these operations are limited by the terms of its permit. See Staff Report, at 8-9. Any physical changes made to refinery operations to accommodate a different crude feedstock would already trigger permitting requirements and new emissions limits under the District's existing New Source Review (NSR) rules.2 Thus, increased emissions stemming from operational changes at a facility would already be within the District's permitting authority. The hypothesis that refinery emissions may increase in the future based on changes in crude slate therefore does not constitute a "need" for numeric emissions caps today, given the District's existing regulatory authority in this area.

Staff Response: To the extent the comment asserts that a rule intended to prevent future increases in emissions cannot be supported as "necessary" under H&S Code § 40727, the Air District disagrees. Supporting the necessity of such a rule entails establishing the likelihood of emission increases such that the increases are shown to be more than hypothetical. The Air District believes it has done so here by explaining that changes in crude can affect emissions. While existing permit limits are a significant constraint on the potential for emissions to increase due to changes in crude, they are not an absolute barrier. Grandfathered sources (i.e., sources that have not been through New Source Review and therefore do not have limits on usage) are one reason why.

Furthermore, the Board cannot legally adopt Rule 12-16 without supporting the need for selectively targeting petroleum refineries. WSPA agrees with the assessment in the Staff Report that the imposition of numeric emissions caps on petroleum refineries would effectively create "a different set of permitting rules" for refineries than other sources in the Bay Area "by limiting pollutants from one Bay Area industrial sector through a mechanism unique to that industry and [that is] unlike the mechanism for all other industrial sectors." Staff Report, at 37. Imposing a different regulatory scheme on refineries is not currently justified in either law or air quality science.

Staff Response: Air District staff did not recommend Rule 12-16 as proposed by CBE and their associates because of the legal concerns expressed in the staff report.

The staff supports adoption of the final proposed version of Rule 12-16 for the reasons outlined in the final staff report including an analysis of the necessity for setting GHG limits at refineries specifically.

Proposed Rule 12-16 Would Conflict with Existing Local, State, and Federal Air Programs and Policies

Proposed Rule 12-16 is likely to restrict refinery emissions to levels that are lower than those authorized under the refineries' current operating permits. These permits were obtained in accordance with the District's existing regulatory program (the NSR program), following detailed technical analyses by the District of refinery operations and emissions data; by law, these permits incorporate emissions limits and control requirements that represent the most stringent of all existing regulatory requirements, within thresholds determined by District Staff to be protective of public health.

Proposed Rule 12-16 would establish a new emissions cap, not based on available technology or public health thresholds, but rather solely on historical emissions. This approach has no basis in science. Refineries have vested rights in operating consistent with the emissions levels in their legally obtained permits, and generally rely on being able to operate up to their permitted potential to emit if needed. Rule 12-16 would arbitrarily re-set those authorized limits, in direct conflict with the District's current permitting rules and policies, without any showing of necessity (as described above).

Staff Response: To the extent the comment asserts that the Air District cannot under any circumstances adopt a rule requiring operation below what is allowed in current permits, the Air District disagrees. However, as expressed in the staff report, Air District staff does have concerns regarding taking such an action as proposed by CBE and their associates. The staff supports adoption of the final proposed version of Rule 12-16 for the reasons outlined in the final staff report. This version, among other improvements, includes an allowance that would address underutilization of permitted facilities during the baseline period.

In addition, the Staff Report explains that, if adopted, the emissions limits shown for each pollutant in Rule § 12-16-300 would need to be adjusted over time for various reasons, including, for example, as emissions measurement methods are improved, new information on criteria pollutants becomes available, or new regulations are adopted. Staff Report, at 23. However, no adjustments to the emissions limits would be made to accommodate new projects permitted through the NSR process, or recent projects permitted through the NSR process but still under construction. While this was an "intended consequence" of CBE's concept, it is an arbitrary and unjustified limitation on the permitting of new refinery projects. Staff Report, at 23. The Staff Report fails to describe how this limitation is necessary or within the District's authority. More importantly, this would directly conflict with existing policies and programs for permitting new projects in the Bay Area. The Clean Air Act (CAA) requires that the District's permitting program allow emissions increases at a facility as long as emissions are offset by an equal or greater amount of reductions of the same pollutant(s) from a location within the region.

Staff Report, at 37. As the Staff Report explains, "Rule 12-16 would, in effect, eliminate that option for refineries and would require all emission increases to be offset within the individual facility." Staff Report, at 23. Thus, Rule 12-16 would directly conflict with the intent of the federal CAA and the District's NSR program to provide facilities with the maximum operational flexibility possible, within the constraints of the overall emissions limits that EPA, the State, and the District have determined are necessary to protect health and the environment. It would also disincentive refineries from investing in improvements to refinery facilities and technology, which technology could be intended to ultimately reduce a refinery's emissions.

Staff Response: Air District staff did not recommend Rule 12-16 as proposed by CBE and their associates because of the legal concerns expressed in earlier versions of the staff report. The staff supports adoption of the final proposed version of Rule 12-16 for the reasons outlined in the final staff report. That said, it seems unlikely that refineries would need permits for increased emissions if the end intent of a project is to "ultimately reduce" refinery emissions.

GHG Caps are Ineffective, Counterproductive, and Inconsistent with Current State Efforts

Rule 12-16 would impose an enforceable limit on a refinery's direct emissions of GHGs. WSPA remains opposed to the localized regulation of GHG emissions from existing Bay Area refinery operations by the District. GHG emissions contribute to a global, not local, challenge; the local GHG regulation of refineries in the Bay Area Air Quality District are likely to simply shift GHG emissions elsewhere in the State or nation. This has been recognized by District staff, the District's Advisory Council, CARB, and the Intergovernmental Panel on Climate Change.4 Furthermore, the potential for rulemaking at multiple levels of government can lead to duplication of effort; or, of even more concern, regulations that work at cross purposes and undermine the effectiveness and efficiency of regulatory programs. WSPA supports pragmatic, market-based approaches to meeting California's climate goals, and is therefore concerned that the District's proposed GHG caps would undermine and interfere with the comprehensive refinery GHG regulations that CARB is developing as part of its state-wide GHG reduction scheme.

Given the significant existing efforts at the State level to regulate GHGs, Rule 12-16 raises significant concerns with the "authority," "consistency," and "nonduplication" requirements under the Health & Safety Code. As the Staff Report acknowledges, GHGs are regulated under the federal CAA and the California Global Warming Solutions Act (AB 32). AB 32 requires CARB to develop a comprehensive approach that California will take to reduce GHG emissions to levels mandated by the Legislature. In 2016, the California Legislature approved SB 32, which extends California's GHG emissions targets through 2030, with an objective of achieving a 40% reduction in emissions as compared to 1990 levels.

Although local regulations may reduce Bay Area GHG emissions, there remains a real potential for these regulations to increase global GHG emissions, which would work at cross-purposes to California's climate goals. The five Bay Area refineries that are the target of these rules represent some of the most efficient, highly-regulated refineries in the world. Ordering these refineries to reduce GHG emissions may require them to pursue a variety of different options, including curtailing production operations (which would necessarily increase production elsewhere to meet the demand for the products these refineries create) to meet the proposed requirements. To the

extent that these options simply result in more processing by refineries that are not local, they result in no reduction in global GHGs; indeed, they would likely increase overall GHG emissions, as non-California refineries increase production to offset the decreases in production from the Bay Area.

Response to Comment: CARB has commented that Rule 12-16 (and 13-1) could help ensure no increases of pollutants. The Air District looks forward to working with CARB through an industrial source action committee of CAPCOA. Air District staff remains concerned about the leakage described by WSPA. However, with improving gas mileage, gasoline consumption is projected to decrease in the future by both CARB and the EIA. Given that the caps are consistent with current production capacity, the leakage described by WSPA seems unlikely.

On January 20, 2017, CARB released its proposed "2017 Climate Change Scoping Plan Update" (the "Proposed Scoping Plan") – its fifth update to the Scoping Plan, which specifically implements the new targets imposed by SB 32.5 CARB has announced numerous public hearings on the Proposed Scoping Plan to take place in 2017, and is currently engaged in extensive efforts to improve and finalize the Proposed Scoping Plan and amendments to CARB's current GHG regulations. The cornerstone of the Proposed Scoping Plan is California's Cap-and-Trade Program, which is a comprehensive, economy-wide program to reduce GHG emissions in California.

In addition to AB 32 and SB 32, AB 197 compels CARB to prioritize "[e]mission reduction rules and regulations that result in direct emission reductions at large stationary sources of greenhouse gas emissions." Cal. H&S Code § 38562.5. Again, the Proposed Scoping Plan addresses these obligations, imposing "prescriptive regulations for refineries that would reduce greenhouse gases" and other air emissions, and in particular targeting a "20 percent reduction in greenhouse gas emissions from the refinery sector." Proposed Scoping Plan at ES3, ES5. The Legislature's decision to authorize CARB – and not the District – to seek these direct GHG emissions reductions continues its longstanding strategy of harmonizing GHG reductions at the state level, not within individual air districts.6

Even assuming the District had the authority to implement Rule 12-16, at best, that rule would merely duplicate the program developed by CARB, in violation of the "nonduplication" requirement. At worst, Rule 12-16 has the potential to interfere with CARB's efforts to implement its own regulations in a reasoned and effective manner, in violation of the "consistency" requirement. CARB is not planning to adopt refinery-focused GHG measures until at least late June, 2017. WSPA is concerned that the District's decision to proceed with GHG emissions caps at this time – before CARB itself has evaluated the available options and determined the most appropriate course of action – will instead create a duplicative, potentially inconsistent, and unnecessary regulatory scheme, and interfere with an orderly implementation of the Proposed Scoping Plan.

Further, refineries already are extensively regulated for GHG emissions. They are subject to California's Cap-and-Trade program; they must comply with CARB's Low Carbon Fuel Standard (which already regulates the carbon intensity of transportation fuels); and they will soon be subject to another statewide program aimed at further direct reductions in refinery GHG emissions once CARB determines the appropriate course of action. Given CARB's prior success

in reducing GHG emissions across California, and the Legislature's express grant of authority to CARB to regulate in this area, the District's efforts are unnecessary, disruptive, and will impose a layer of burdensome bureaucracy that has little or no environmental benefit.

Staff Response: CARB has commented that Rule 12-16 (and 13-1) could help ensure no increases of pollutants. The Air District looks forward to working with CARB through an industrial source action committee of CAPCOA. However, it is unclear what the result of that effort would be or how long it would take. In the meantime, refinery GHG emissions have not been decreasing.

Rule 12-16 is Not Within the District's Authority to Adop*t*

In proposing a new rule or regulation, H&SC § 40001 requires that the District "determine that there is a problem that the proposed rule or regulation will alleviate and that the rule or regulation will promote the attainment or maintenance of state or federal ambient air quality standards[.]" Id. § 40001(c). As discussed above, the District has not identified an air quality problem that would justify the numeric emissions caps in Rule 12-16, nor has the District demonstrated that Rule 12-16 would promote the attainment or maintenance of the NAAQS. This is because Rule 12-16 addresses a problem that may occur; the District does not have the authority under the federal Clean Air Act to adopt regulations that do not address existing air quality issues.

While CARB may elect "to partner with California's local air districts," it has yet to determine whether to do so and is currently considering a range of possibilities.

Staff Response: Air District staff did not recommend Rule 12-16 as proposed by CBE and their associates because of the legal concerns expressed in earlier versions of the staff report.

Emissions Caps Based on Historical Emissions are Technically Problematic

WPSA incorporates by reference its discussion of this issue in WSPA's comment letter dated November 29, 2016. *(Staff note: date of letter was 12/4/2016.)*

Not only are the proposed emissions caps in §§ 12-16-301 to -305 duplicative of existing federal and state programs targeted at reducing toxic emissions, they are also technically problematic and could potentially require refineries to cut production altogether or risk non-compliance.

As WSPA has previously described, facilities purchase capital equipment today based on what may happen in the future. The District, and every other air permitting jurisdiction in the United States, issues air permits based on the impacts of a facility's potential emissions. In California, refineries pay to offset the potential emissions at the time the equipment is permitted. For the District to now propose capping emissions based on actual emissions levels from 2010-2014 raises significant Takings concerns and conflicts with these other District regulatory programs (which continue to exist). Further, the proposed emissions caps in §§ 12-16-301 to -305 would be inconsistent with refineries' existing permit limits, which in most cases were specifically designed (and paid for) by the refineries to ensure necessary operational flexibility.

Staff Response: Air District staff did not recommend Rule 12-16 as recommended by CBE and their associates because of the legal concerns expressed in the staff report. The staff supports

adoption of the final proposed version of Rule 12-16 which addresses the issues raised by WSPA as explained in the final staff report. Among the improvements in the final version are GHG allowances that address the problem of permitted facilities that were underutilized during the baseline period.

The specific historical emissions baselines chosen are similarly problematic. First, refineries have found that the values in the proposed regulation that are supposedly based in reported emissions do not match the official records of reported emissions.

Staff Response: Air District staff has been working with each facility to identify and reconcile any discrepancies If there are any remaining discrepancies, WSPA needs to identify them specifically.

Second, as the District's own Staff Report makes clear, the selected baseline period encompasses a period of artificially low demand, coming out of the last Recession. Staff Report at page 21, Figure 3. As a result, Rule 12-16, as currently drafted, would "lock in" this temporary drop in demand as a permanent, facility-wide cap. At a minimum, the District's economic analysis must evaluate the significant impacts of imposing the cap at such an artificially low level that does not reflect current or anticipated future demand.

Staff Response: Rule 12-16 provides for an increase in emissions and production capacity from each refinery's highest annual emissions during the baseline period from 2010 – 2015, and is adequate to supply the Bay Area's current transportation fuel needs. Future needs are uncertain, as population growth is anticipated to be offset by increased use of mass transit, improved fuel economy, and more alternate fuel vehicles. Projections by the Energy Information Administration indicate total transportation fuels are expected to peak at approximately 7% above the baseline period in 2018, at a level 4% less than the peak fuel demand in 2007. The final version of Rule 12-16 accounts for this anticipated increase in demand.

The methodology by which this cap is calculated and revised also raises significant concerns. As currently drafted, Rule 12-16 would require ongoing revisions to these caps (each of which would require Board approval) whenever the methods used to calculate emissions changed. Yet the proposed baselines in §§ 12-16-301 to -305 are themselves based on annual emissions calculations from years 2010-2014 that were developed using different emissions calculation methodologies than are being used today. In other words, the current rule is comparing apples and oranges: the District calculated historic actual emissions (the values that the proposed caps are based on) differently than it currently requires actual emissions to be calculated, and differently than it will require the caps be recalculated in the future when the methodologies change once again; yet these changes are never evaluated for consistency against the original methodology that was used to calculate the initial cap. As a result, the caps under which the Refineries will be required to operate will routinely fluctuate based solely on methodology changes, which may not accurately reflect the "real" emissions that the caps purportedly reflect. For most sources, the District's current emissions inventory guidelines (Guidelines) significantly deviate from the methods that the District has used in previous years. The Guidelines require reporting emission sources, including cargo carriers, road dust, and equipment maintenance emissions, which the District has not included in previous emission inventories. The Guidelines specify emission factors that may not have been used in previous emission inventories. Similarly,

in the case of California's GHG reporting rule, there have been changes with respect to which sources are reported and how they had to go through a regulatory approval process.

The nature of the Guidelines themselves further exacerbates this concern. The District's current Guidelines are not yet finalized, meaning that WSPA and its members cannot fully and fairly evaluate how the final Guidelines may change the calculation methodologies as compared to the prior reported emissions inventories on which the caps are based. Furthermore, these Guidelines can be changed at any point in the future without a public Board action – and frequently, as the District's own practice has made clear, without involving or informing stakeholders. Thus, the refineries may not have sufficient time to respond or even be informed of changes to the Guidelines that affect compliance with the limits. Board approval of changes to the limits that incorporate changes to the Guidelines may never occur, or may occur at a date too late for refineries to comply with the annual limit.

Similarly, the "Determination of Compliance Procedure" in § 12-16-601 refers to an as-yet unwritten part of the District's Manual Of Procedures. If the compliance procedure is not finalized by rule adoption, it may not be possible for the refineries to comply. Sufficient time is needed to implement compliance.

Finally, the January 1, 2018 compliance deadline does not provide enough time for refineries to comply with Rule 12-16. The refinery emissions estimates using the Guidelines may not even be finalized by January 1, 2018 due to the iterative review, corrective action, APCO Action and public inspection process provided in § 12-15-402. Once the emission calculation methods and estimates are finalized, baseline emissions would need to be updated in order to obtain Board approval of changes to the limits. The emission estimation method must be finalized for a refinery to implement a compliance program. The refineries cannot reasonably plan to comply with Rule 12-16 by January 1, 2018, when the actual emissions limits – or, indeed, even the methodology by which those limits will be determined – may well be unknown as of that date.

Staff Response: Air District staff agrees that as methods for the emissions inventory guidelines improve, adjustments to the emissions limits will be required. These adjustments will go through the rule-making process with ample opportunity for comment, and lead-time for implementation. However, this is not an issue for the GHG portion of the rule. For those emissions, the methodology used to determine the baseline period and the methodology to determine compliance are the same.