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ENVIRONMENT | EARTHJUSTICE | EAST YARD COMMUNITIES FOR  
ENVIRONMENTAL JUSTICE

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**VIA ELECTRONIC MAIL ONLY**

Heather Farr, Planning and Rules Manager  
South Coast Air Quality Management District  
[hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**Re: Comments on Proposed Amended Rule 1118 (Control of Emissions from Refinery Flares)**

Dear Ms. Farr:

The undersigned organizations submit these comments on Proposed Amended Rule 1118. Updates to the rule are critical to fulfill the Air District's commitment in the Community Emissions Reduction Plan (CERP) for Wilmington, Carson, and West Long Beach to reduce flare events and/or emissions by 50% by 2030.<sup>1</sup> To achieve these reductions, the Air District proposed several amendments to Rule 1118 that should be analyzed as part of this rulemaking in order to assess their effectiveness:

- 1) Lower performance targets and substantially increased mitigation fees for exceeding targets to strongly disincentivize and prevent all kinds of flaring;
- 2) Additional flare minimization plans for all refineries with the Air District's evaluation of plans that best minimize flaring as benchmarks for approval;
- 3) Remote optical sensing for improved flare emission characterization since flare combustion efficiency is regularly overestimated, causing emissions underestimation; and
- 4) Facilities to submit flare data in publicly available form, and a commitment by the Air District to publish data about individual flaring events and Specific Cause Analysis on its website.

Each of these amendments is essential to confront the significant emissions from flares that contribute to the dire air quality in fenceline communities and the region. The District also proposed the evaluation of additional measures, such as backup power to prevent flaring due to power outage, the possibility of header modifications with process controls to divert gases, and

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<sup>1</sup> S. Coast Air Quality Mgmt. Dist., *Community Emissions Reduction Plan for Wilmington, Carson, West Long Beach*, at 5b-9 (Sept. 2019), <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf?sfvrsn=8> [archived at <https://perma.cc/6HZC-UEX4>].

lower emission flaring possibilities. On this last issue, we are interested in evaluation of the problem of increased emissions from flares due to over-quenching flames in steam-assisted flares. An “all-of-the above” strategy to reduce flare events and emissions is necessary. Moreover, we urge the Air District to address and implement the following additional recommendations to increase transparency and ensure robust public participation in this rulemaking to secure the strongest rule possible, and ensure accountability through improved Specific Cause Analysis and corrective action requirements:

- 1) Release data to the public on individual flare events subject to Proposed Amended Rule 1118 and Specific Cause Analysis triggered by flare events in the last three years (2020-2023);
- 2) Enumerate minimum corrective actions to address issues identified in Specific Cause Analysis; and
- 3) Require Specific Cause Analysis and corrective action for all flare events.

We appreciate the Air District updating this important rule to reduce emissions from refinery flares. The immediate need for such reductions is especially critical given the Air District’s delay in initiating this rulemaking for nearly three years.<sup>2</sup> Ultimately, the most effective way to minimize flare events and emissions is to require preventative measures that avert flaring in the first place. Thus, the Air District must prioritize flare prevention to achieve the emission reductions promised in the CERP and address the harmful impacts of flares on fence-line communities and communities throughout the region.

### **I. Refinery flares emit harmful pollutants that contribute to poor air quality in the South Coast Air Basin**

Emissions from flares cause a range of health burdens. Flares emit sulfur oxides (SO<sub>x</sub>) when any sulfur, whether as part of hydrogen sulfide or another sulfur compound, is not completely combusted. Flares, and the refineries where they are predominantly located, are the main source of SO<sub>x</sub> pollution in Wilmington, Carson, and West Long Beach.

Sulfur oxides react with other compounds in the atmosphere to form small particles that cause particulate matter pollution.<sup>3</sup> Particulate matter can penetrate deeply into the lungs and cause a range of health problems, including increased respiratory symptoms, irregular heartbeat, and premature death.<sup>4</sup>

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<sup>2</sup> *Community Emissions Reduction Plan*, *supra* note 1, at 5a-4.

<sup>3</sup> EPA, *Sulfur Dioxide Basics*, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> [archived at <https://perma.cc/65W8-IPZS>] (last updated Feb. 16, 2023).

<sup>4</sup> EPA, *Health and Environmental Effects of Particulate Matter (PM)*, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm> [archived at <https://perma.cc/MM94-TC36>] (last updated Aug. 30, 2022).

Flares also emit volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>). The Air District has identified that VOC emissions from flares are grossly underestimated because of the assumption of high combustion efficiency. This false assumption assumes that most VOCs combust into carbon dioxide. The Air District committed to adding requirements for specialized optical sensing of flares in future regulation to address this gross underestimation of VOC emissions. Communities are still waiting for the Air District to act on this commitment.

Nitrogen oxides react with VOCs to form ground-level ozone.<sup>5</sup> Flares are a major source of highly reactive VOCs (HRVOCs), which are particularly effective in generating ozone.<sup>6</sup> The South Coast Air Basin remains in extreme non-attainment of both state and federal ozone standards.<sup>7</sup> Ozone has a range of respiratory health impacts, including lung irritation, inflammation, and worsening of existing chronic health conditions.<sup>8</sup> On their own, NO<sub>x</sub> and VOCs can cause long-term health consequences, including reduced lung function, cancer, and nervous system damage.<sup>9</sup>

Emissions from refinery flares disproportionately impact low-income communities and communities of color in Wilmington, Carson, and West Long Beach. Rule 1118 applies to 27 flares at eight refineries.<sup>10</sup> Twenty-one of those flares and seven of those refineries are located

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<sup>5</sup> EPA, *Ground-level Ozone Basics*, <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics> [archived at <https://perma.cc/MK5U-5RB4>] (last updated June 14, 2022).

<sup>6</sup> Daniel H. Chen & Arokia Raj Alphones, *Characterization of the incipient smoke point for steam/air-assisted and nonassisted flares*, 69 J. of the Air & Waste Mgmt. Ass'n 119 (2019), <https://doi.org/10.1080/10962247.2018.1525443> [archived at <https://perma.cc/Y9JY-QYTK>] (“Flares are important safety devices for pressure relief; at the same time, flares are a significant point source for soot and highly reactive volatile organic compounds (HRVOCs).”).

<sup>7</sup> See S. Coast Air Quality Mgmt. Dist., *National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin* (Sept. 2018), <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf> [archived at <https://perma.cc/8EWZ-5FZP>]; EPA, *8-Hour Ozone (2015) Nonattainment Area State/Area/County Report*, <https://www3.epa.gov/airquality/greenbook/jncs.html#CA> [archived at <https://perma.cc/Z8VU-44QL>] (last updated Mar. 31, 2023).

<sup>8</sup> Cal. Off. of Env't Health Hazard Assessment, *Air Quality: Ozone*, <https://oehha.ca.gov/calenviroscreen/indicator/air-quality-ozone> [archived at <https://perma.cc/KTG4-W82U>].

<sup>9</sup> See, e.g., Am. Lung Ass'n, *Nitrogen Dioxide*, <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/nitrogen-dioxide> [archived at <https://perma.cc/LFS9-4WMK>] (last updated Nov. 17, 2022); Am. Cancer Soc'y, *Benzene and Cancer Risk*, <https://www.cancer.org/cancer/cancer-causes/benzene.html> [archived at <https://perma.cc/YJF5-BL55>] (last revised Jan. 5, 2016); Cal. Off. of Env't Health Hazard Assessment, *Chemicals Known to the State to Cause Cancer or Reproductive Toxicity* (Sept. 13, 2019), <https://oehha.ca.gov/media/downloads/proposition-65/p65list091319.pdf> [archived at <https://perma.cc/UB8P-3CMS>].

<sup>10</sup> S. Coast Air Quality Mgmt. Dist., *Final Staff Report Proposed Amended Rule 1118 – Control of Emissions from Refinery Flares*, at 3 (July 2017), <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-jul7-038.pdf> [archived at <https://perma.cc/A5D7-W4RE>].

in Wilmington, Carson, and West Long Beach. Similarly, all the sulfur recovery plants and hydrogen plants subject to Rule 1118 are located in Wilmington, Carson, and West Long Beach.

Residents in these communities already experience significant diesel pollution, toxic releases, and hazardous waste exposures from a range of industrial sources in the area, including freeways and the Ports of Los Angeles and Long Beach.<sup>11</sup> In accordance with AB 617, the Wilmington, Carson, and West Long Beach Community Steering Committee developed a CERP to address the community's air quality priorities. In the CERP, the steering committee specifically prioritized requiring more stringent air pollution controls on refinery flares.<sup>12</sup> In response, the Air District committed to amend Rule 1118 to improve refinery flare notifications and reduce flare events.<sup>13</sup> Such amendments are long overdue and urgently needed. Accordingly, the Air District must develop and expeditiously implement a strong Proposed Amended Rule 1118 that fulfills the Air District's commitment to reduce the ongoing impacts of flare events and emissions on community health and safety.

## **II. The Air District must release information to the public regarding flares subject to Proposed Amended Rule 1118 and Specific Cause Analysis triggered by flare events in the last three years (2020–2023)**

Proposed Amended Rule 1118 is a cornerstone of the Air District's pledge to reduce overall refinery emissions of SO<sub>x</sub>, VOCs, and NO<sub>x</sub> by 50% by 2030.<sup>14</sup> For communities to hold the Air District accountable for such emission reductions, the Air District must provide community members with information about all the flares subject to the rule. In addition, the Air District must provide information about the emissions, monitoring, and control requirements on such flares for community members to evaluate the current conditions of flares and the effectiveness of the Air District's proposals to reduce flare events and emissions.

The Air District should also release information about Specific Cause Analysis triggered by flare events in the last three years. Specific Cause Analysis identifies the cause and duration of a flare event, and any mitigation and corrective actions taken to prevent recurrence of a similar event.<sup>15</sup> Specific Cause Analysis and resulting corrective actions can be major pollution prevention tools. Providing information about such tools to community members will allow the Air District to work alongside the public to identify and resolve deficiencies in Specific Cause Analysis and corrective actions.

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<sup>11</sup> Cal. Off. of Env't Health Hazard Assessment, CalEnviroScreen 4.0 (Oct. 20, 2021), <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40> [choose "ArcGIS World Geocoding Service" from drop-down arrow next to location search bar; then type "Wilmington, CA, USA", "Carson, CA, USA", or "Westside, Long Beach, CA, USA", selecting the top autocomplete entry from the search drop-down menu for each location].

<sup>12</sup> *Community Emissions Reduction Plan*, *supra* note 1, at 5b-3.

<sup>13</sup> *Id.* at 5b-5, 5b-9.

<sup>14</sup> *Id.* at 5b-9.

<sup>15</sup> S. Coast Air Quality Mgmt. Dist., Rule 1118(c)(8).

### **III. Proposed Amended Rule 1118 must enumerate minimum corrective measures that address and prevent flare events and emissions identified in Specific Cause Analysis**

Currently, Rule 1118 requires owners and operators of flares to “identify corrective measures” in their Specific Cause Analysis.<sup>16</sup> However, the rule provides no minimum requirements for such corrective measures. Minimum requirements are necessary to ensure that owners and operators are proactively and effectively implementing measures that address and prevent flare events and emissions. For example, enumerated minimum requirements could ensure that owners and operators of flares utilize the most robust flare minimization and prevention technologies or methods. Without such requirements, owners and operators of flares are incentivized to seek the least costly and burdensome corrective measures that leave communities exposed to dangerous flare events and emissions.

### **IV. Proposed Amended Rule 1118 must require Specific Cause Analysis and corrective action for all flare events**

Rule 1118 requires Specific Cause Analysis for any flare event that exceeds 100 pounds of VOCs, 500 pounds of SO<sub>x</sub>, or more than 500,000 standard cubic feet of vent gas.<sup>17</sup> For flare events below these thresholds, but still combusting more than 5,000 standard cubic feet of vent gas, Rule 1118 requires owners and operators of flares to “conduct an analysis and determine the relative cause” of the event.<sup>18</sup>

Rule 1118 does not define what the requirement to “conduct an analysis and determine the relative cause” entails and does not require corrective action to address or prevent flare events that fall below the threshold for Specific Cause Analysis. Thus, owners or operators of flares can largely disregard such flare events even though the events may still have significant impacts individually and cumulatively. In fact, the Air District admits that “some refineries continue to experience thousands of individual flare events each year.”<sup>19</sup> Yet operators and owners only reported, on average, 164 flare events every year on the Flare Event Notification System (FENS) between 2020 and 2022 in accordance with Rule 1118.<sup>20</sup> Because reporting flare events on FENS is tied to conducting Specific Cause Analysis, this data means that hundreds, if not thousands, of flare events occur every year without triggering Specific Cause Analysis and

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<sup>16</sup> S. Coast Air Quality Mgmt. Dist., Rule 1118(b)(20).

<sup>17</sup> S. Coast Air Quality Mgmt. Dist., Rule 1118(c)(6).

<sup>18</sup> S. Coast Air Quality Mgmt. Dist., Rule 1118(c)(11).

<sup>19</sup> S. Coast Air Quality Mgmt. Dist., Governing Board Agenda No. 38: Determine that Proposed Amendments to Rule 1118 – Control of Emissions from Refinery Flares are Exempt from CEQA; Amend Rule 1118, and Transfer and Appropriate Funding, at 2 (July 2017), <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-jul7-038.pdf> [archived at <https://perma.cc/G5VF-HBE7>].

<sup>20</sup> S. Coast Air Quality Mgmt. Dist., PowerPoint Presentation at Proposed Amended Rule 1118 Working Group Meeting 2, at 32 (Oct. 26, 2022), <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1118/par-1118-wgm-2-presentation.pdf> [archived at <https://perma.cc/8VVI-FI79>].

corrective action. Such events are significant opportunities for the Air District and owners and operators of flares to address, minimize, and prevent flare events and emissions. Accordingly, the Air District must amend Rule 1118 to require Specific Cause Analysis and corrective action for all flare events.

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Flare events and emissions release harmful pollutants into fenceline communities and contribute to the South Coast Air Basin's extreme non-attainment of both state and federal ozone standards. The poor air quality in the South Coast Air Basin demands that the Air District take bold measures to effectively prevent and minimize flare events and emissions. Transparency and accountability must guide the Air District as it proceeds with this important rulemaking. Transparency means providing information to community members to allow for meaningful engagement based on clear identification of baseline conditions and opportunities to address deficiencies. Accountability means prioritizing the prevention of flaring through robust analysis and effective corrective actions that recognize the individual and cumulative impact of all flare events and emissions.

Respectfully submitted,

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*\* Under the supervision of attorneys, contributed to the research and/or factual portions of this document but did not provide legal services or analysis.*