

Responses to Public Comments

Responses to public comments on revised fence-line air monitoring plans for Chevron Products Company, Martinez Refining Company, Phillips 66, Tesoro Refining & Marketing Company (Marathon), and Valero Refining Company



**BAY AREA AIR QUALITY
MANAGEMENT DISTRICT**

July 2023

About the Bay Area Air Quality Management District

The California Legislature created the Air District in 1955 as the first regional air pollution control agency in the country. The Air District is tasked with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties. It is governed by a 24-member Board of Directors composed of locally elected officials from each of the nine Bay Area counties.

Air District Team

Alexandra Kamel, Legal Division
Chris Crowley, Compliance & Enforcement Division
Jerry Bovee, Meteorology & Measurement Division
Joe Lapka, Meteorology & Measurement Division
Josephine Fong, Meteorology & Measurement Division
Katherine Hoag, Meteorology & Measurement Division

For more information, contact:

Katherine Hoag, Ph.D.
Meteorology and Measurement Division
Bay Area Air Quality Management District
(415) 749-4619 | khoag@baaqmd.gov

or Visit

<https://www.baaqmd.gov/>



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1.0 INTRODUCTION

Bay Area Air Quality Management District (“Air District”) Regulation 12, Rule 15 requires owners and operators of the Bay Area refineries (Chevron Products Company, Martinez Refining Company, Phillips 66, Tesoro Refining & Marketing Company, and Valero Refining Company) to obtain and maintain Air District approval of an air monitoring plan (AMP or plan) for establishing and operating fence-line air monitoring systems. To be approvable, AMPs must meet the requirements outlined in the Air Monitoring Guidelines for Petroleum Refineries published by the Air District in 2016 (Guidelines), including any letters interpreting those guidelines, and include detailed information describing:

- the equipment used for fence-line monitoring and recording and reporting of air pollutant levels;
- the siting, operation, and maintenance of the equipment; and
- procedures for implementing data quality assurance and quality control.

Prior versions of the AMPs for these facilities were previously made available for public comment on September 8, 2017, and were conditionally approved by the Air District on June 8, 2018, pending further revisions for hydrogen sulfide (H₂S) monitoring and quality assurance procedures. Following letters issued by the Air District on October 6, 2021 and December 22, 2022 interpreting Regulation 12-15 and the Guidelines, the facilities submitted AMPs with those revisions.

The Air District released the revised plans for a public comment period that ran from March 20, 2023 through 5 PM on April 20, 2023. Although Regulation 12-15 does not require the Air District to respond to the public comments on an AMP, this document presents the Air District’s responses to the comments received during the public comment period on the revised refinery AMPs, which include additional monitoring of H₂S. The Air District will consider these comments prior to approving or disapproving the final plans.

2.0 GENERAL COMMENTS

General Support for the Air District's Requirements as Stated in the 12/22/2022 Letters to Refineries

Benicia Community Air Monitoring Program, A.L. Steiner, Alvaro Ramos, Alysia Gadde, Andrea Kroll, Andrew Smith, Andy Baldovino, Ann Dorsey, Ann Harvey, Anna Henry, Anne-Christine Strugnell, Barbara Ungersma, Beate Bruhl, Ben Stiegler, Beth Darlington, Betty Lucas, Blaine Burgstrom, Bodil Fox, Bonnie Burke, Carol Bray, Catherine Flitcroft, Cathy Bennett, Charesa Harper, Christine Stevens, Christopher Dawe, Ciriscioli, Claire Broome, Connor Kelley, Daniel Morgan, David Baca, David Doering, David Pedersen, Denise Cullen, Diana Bohn, Donna Davies, Dorothy McQuown, Elayna Trucker, Elizabeth Lobos, Ellen Beans, Elliot Helman, Eric Byrne, Frances Aubrey, Franziska Raedeker, Gail Walden, Gary Farber, George Day, Greg Plant, Greg Rosen, Gwen Ottinger, Heather Lee, Hilary Aitken, James Eggers, Jean Jackman, Jean Walker, Jeff Lindquist, Jennifer Valentine, Jessea Greenman, Jessica Sorrels, John Oda, John Teevan III, Jordan Briskin, Judith Ghidinelli, Judith Howell, Judith Sullivan, June Mejias, Justin Truong, Karen Schlumpp, Kate Lenhardt, Kathleen Carey, Katie Booth, Kevin Slauson, Kimberly Klein, Kobi Naseck, Kristel Rietesel, Kristin Reed, Larnie Fox, Laura Bernstein, Laura Brody, Laura Neish, Lawrence Deng, Lilly Chen, Lin Griffith, Linda Stone, Lisa Reinertson, Lori Grundman, Madeline Koster, Marcia Liberson, Marjory Keenan, Martin Marcus, Mical Woldemichael, Michael Evans, Michelle Puckett, Miss T., Molly Boggs, Molly Lazarus, Monica Brown, Nancy Carey, Nancy Holdridge, Natasha Kaluza, Nathalie Christian, Nina Lyons, Nora Privitera, Nora Roman, Pat Toth-Smith, Peter Adams, [personal email address redacted], Ralph and Vicki Dennis, Randy Monroe, Ree Whitford, Robert Nickeson, Roger Straw, Sabina Yates, Sam Reed, Sandra Cioppa, Sandra Kozak, Sarah Rodriguez, Sharon Maher, Shoshana Wechsler, Stan Golovich, Stephen Golub, Steve Bloom, Steve Masover, Susan Penner, Susan Penner, Susan Walp, Ted Obbard, Tim Laidman, Tim Morgan, Todd Snyder, Tom Carlino, Tom Kabat, Valerie Ventre-Hutton, Vanessa Warheit, Wendy Stock, Will McGarvey, Ziv Tzvieli

Comment: The commenter states that the revised refinery AMPs show that four out of five refineries are not meeting the Air District's requirements as specified in the 12/22/2022 letters to the refineries, with the Martinez Refinery Company being the only one using an open path system that satisfies the requirements. Additionally, the commenter provides support for all refineries to utilize the equipment that meets the stated requirements as soon as possible to protect public health and safety.

Response: The Air District agrees that the contents of the draft revised AMPs submitted by Chevron, Phillips 66, Tesoro, and Valero are deficient and do not meet the requirements of Section 12-15-403; the Air District is issuing a notice of deficiency (NOD) to each of these refineries pursuant to Section 12-15-404.4.

The NODs issued by the Air District specify the basis for our determination that the plans do not meet the requirements of Section 12-15-403. Upon receipt of these NODs, the owner/operator of each facility must correct the deficiencies and resubmit a revised AMP within 45 days. If the owner/operator of a facility fails to correct any deficiency identified in the NOD, the Air District will take appropriate steps as provided by Rule 12-15.

While the open path H₂S monitoring system installed at the Martinez Refining Company (MRC) refinery appears capable of meeting the performance specifications in our December 22, 2022 letter, the Air District determined that other aspects of MRC's proposed revised AMP do not meet the requirements of Section 12-15-403. As a result, the Air District is also issuing an NOD to MRC following the same process described above.

Requirements Should be Uniform Across Refineries

Benicia Community Air Monitoring Program, A.L. Steiner, Alvaro Ramos, Alysia Gadde, Andrea Kroll, Andrew Smith, Andy Baldovino, Ann Dorsey, Anna Henry, Anne-Christine Strugnell, Barbara Ungersma, Beate Bruhl, Beth Darlington, Betty Lucas, Blaine Burgstrom, Bodil Fox, Bonnie Burke, Bruce Kaplan, Carol Bray, Catherine Flitcroft, Cathy Bennett, Charesa Harper, Christine Stevens, Christopher Dawe, Ciriscioli, Connor Kelley, Daniel Morgan, David Baca, David Doering, David Pedersen, Denise Cullen, Diana Bohn, Donna Davies, Dorothy McQuown, Elayna Trucker, Elizabeth Lobos, Elliot Helman, Eric Byrne, Frances Aubrey, Franziska Raedeker, Gail Walden, Gary Farber, Greg Plant, Greg Rosen, Gwen Ottinger, Heather Lee, Hilary Aitken, James Eggers, Jean Walker, Jeff Lindquist, Jennifer Valentine, Jessea Greenman, Jessica Sorrels, John Oda, John Teevan III, Jordan Briskin, Judith Ghidinelli, Judith Sullivan, June Mejias, Justin Truong, Karen Schlumpp, Kate Lenhardt, Kathleen Carey, Katie Booth, Kevin Slauson, Kimberly Klein, Kobi Naseck, Kristel Rietesel, Kristin Reed, Larnie Fox, Laura Bernstein, Laura Brody, Laura Neish, Lawrence Deng, Lilly Chen, Lin Griffith, Linda Stone, Lisa Reinertson, Lori Grundman, Madeline Koster, Marcia Liberson, Marjory Keenan, Martin Marcus, Mical Woldemichael, Michael Evans, Michelle Puckett, Miss T., Molly Boggs, Molly Lazarus, Monica Brown, Nancy Carey, Nancy Holdridge, Natasha Kaluza, Nathalie Christian, Nora Privitera, Nora Roman, Pat Toth-Smith, [personal email address redacted], Ralph and Vicki Dennis, Randy Monroe, Ree Whitford, Roger Straw, Sandra Cioppa, Sandra Kozak, Sarah Rodriguez, Sharon Maher, Shoshana Wechsler, Stan Golovich, Stephen Golub, Steve Bloom, Steve Masover, Susan Penner, Susan Penner, Susan Walp, Ted Obbard, Tim Laidman, Todd Snyder, Tom Carlino, Valerie Ventre-Hutton, Vanessa Warheit, Wendy Stock, Will McGarvey, Ziv Tzvieli

Comment: The commenter requests that all operational and data requirements be as uniform as possible to allow communities to compare measurements and performance across the refineries. Requiring technologies to have similar operational and data display parameters will also help reestablish community trust in the data.

Response: While flexibility is sometimes needed to accommodate technical limitations or operational differences across the facilities, the Guidelines, and Air District letters interpreting Rule 12-15 and the Guidelines, provide a degree of standardization with respect to aspects of fence-line monitoring at refineries such as pollutant coverage, siting, instrumentation, operation, maintenance, quality assurance, quality control, and data reporting. As a result, correction of the deficiencies in the NODs to meet these requirements will result in greater uniformity across the plans.

Refineries Need to be Held Accountable

Benicia Community Air Monitoring Program, Alan Jackman, Alvaro Ramos, Andrea Kroll, Andrew Smith, Ann Harvey, Beate Bruhl, Ben Stiegler, Betty Lucas, Blaine Burgstrom, Bodil Fox, Carol Bray, Catherine Flitcroft, Cathy Bennett, Christine Stevens, Ciriscioli, Claire Broome, Cynthia Hanson, Daniel Morgan, David Bezanson, David Pedersen, Denise Cullen, Elizabeth Lobos, Ellen Beans, Eric Byrne, Frances Aubrey, Franziska Raedeker, Gail Walden, George Day, Greg Plant, Greg Rosen, Heather Lee, Hilary Aitken, James Eggers, Jean Walker, Jennifer Valentine, Joyce Banzhaf, Judith Ghidinelli, Judith Howell, Judith Sullivan, June Mejias, Karen Schlumpp, Kate Lenhardt, Kathleen Carey, Kimberly Klein, Kristel Rietesel, Larnie Fox, Lawrence Deng, Linda Stone, Lisa Reinertson, Lori Grundman, Madeline Koster, Marcia Liberson, Marjory Keenan, Merry Gregg, Michelle Klimek, Molly Boggs, Monica Brown, Nancy Carey, Nancy Holdridge, Nathalie Christian, Nora Privitera, Pat Toth-Smith, Peter Adams, Ralph and Vicki Dennis, Ree Whitford, Robert Raven, Roger Straw, Sabina Yates, Sandra Cioppa, Sandra Kozak, Sarah Rodriguez, Sharon Maher, Shoshana Wechsler, Stan Golovich, Susan Penner, Tim Laidman, Tim Morgan, Timothy Sullivan, Virginia Morris, Will McGarvey

Comment: The commenter requests that the Air District enforce Rule 12-15. The refineries need to be held accountable, not just by paying fees, but by installing the required equipment immediately.

Response: The Air District agrees with the commenters that the refineries must comply with the requirements of Rule 12-15 and is taking steps to ensure such compliance is achieved. As required

by Section 12-15-404.4, the Air District has reviewed the AMPs that were released for public comment and has determined that they do not meet the requirements of Section 12-15-403. Accordingly, the Air District notified the refineries of this in writing on July 19, 2023, and specified the basis for that determination. The owner/operator of each refinery has 45 days from the date the notification was received to correct the identified deficiencies and resubmit a revised AMP and quality assurance project plan (QAPP). If the owner/operator of a refinery fails to correct any deficiency identified in our July 19, 2023 notice of deficiency, the Air District will take appropriate steps as provided by Rule 12-15.

Host Public Meeting

Benicia Community Air Monitoring Program, Alvaro Ramos, Alysia Gadde, Andrea Kroll, Beate Bruhl, Betty Lucas, Bodil Fox, Carol Bray, Catherine Flitcroft, Cathy Bennett, Christine Stevens, Ciriscioli, Daniel Morgan, David Pedersen, Denise Cullen, Elizabeth Lobos, Greg Plant, Heather Lee, Hilary Aitken, Jean Walker, Judith Ghidinelli, Judith Sullivan, June Mejias, Karen Schlumpp, Kate Lenhardt, Kathleen Carey, Kimberly Klein, Kristel Rietesel, Larnie Fox, Lisa Reinertson, Lori Grundman, Molly Boggs, Nancy Carey, Nancy Holdridge, Nathalie Christian, Nora Privitera, Pat Toth-Smith, Ralph and Vicki Dennis, Roger Straw, Sandra Cioppa, Sandra Kozak, Sharon Maher, Stan Golovich, Stephen Golub, Susan Penner, Will McGarvey

Comment: The commenter recommends that a public meeting hosted by the Air District be held in the near future to follow up on public comments and enforcement of Rule 12-15.

Response: The Air District recognizes the commenters' desire for a public meeting and will consider holding one around the time we make a final decision to approve or disapprove the plans.

3.0 COMMENTS REGARDING FENCELINE MONITORING DATA

Data is Controlled Exclusively by Facilities and their Contractors

Benicia Community Air Monitoring Program

Comment: The commenter states that the performance record of the system is unreliable and is concerned that the data reporting is controlled exclusively by the facilities and their contractors. The commenter is concerned that the Air District receives untrustworthy, unreliable, obfuscated data reporting from those fence line systems.

Response: The Air District recognizes the commenters' concerns and is taking steps to address them. Notably, our July 19, 2023 notices of deficiency to the refineries identified several deficiencies in the AMPs and QAPPs that are related to data validation and reporting. Correction of these deficiencies will significantly improve the reporting process, the quality of the reported data, the transparency of the data, and the ability of the Air District and the public to independently review the data.

Plans Need to Address Required H₂S and Performance Criteria

Benicia Community Air Monitoring Program

Comment: The commenter states that further modifications of the AMPs and QAPPs are needed to address the required H₂S criteria to ensure data are accurate, precise, transparent, and can be independently recreated to validate results presented by the refineries. Similar performance criteria should be developed for all other compounds covered by Rule 12-15, as previously stated in BCAMP's 12/5/2022 letter to Jerry Bovee.

Response: The Air District has determined that the AMPs and QAPPs proposed by all five refineries have deficiencies that relate to the accuracy, precision, validation, and transparency of the fence line monitoring data. Several of these deficiencies were raised in notices of deficiency sent to the refineries in 2022 but remained unresolved in the revised draft plans. All of the outstanding deficiencies related to H₂S monitoring have been communicated to the refineries in a final notice of deficiency that was sent to each refinery on July 19, 2023. Pollutants other than H₂S are outside the scope of the current review process.

Flagged Data Need to be Available for Real-Time Monitoring

Benicia Community Air Monitoring Program

Comment: The commenter notes that, for the four refineries that do not meet minimum Air District requirements, the QAPP states that concentrations flagged for review will potentially not be available until quarterly reports are submitted, which defeats the purpose of real-time monitoring and should not be allowed.

Response: The Air District agrees with the commenter; this is among the deficiencies included in the notices of deficiency sent to the refineries on July 19, 2023.

Data Should be Readily Available to the Public, Downloadable, and Reported on a More Frequent Basis

Claire Broome, Gwen Ottinger

Comment: One commenter states generally that the fenceline monitoring data should be made readily available to the public, while the other commenter states that the Air District should ensure refineries adhere to reporting standards and make files available for direct download by the public. In addition, the commenter requests that refineries (a) report all fenceline monitoring data in csv and API format, and (b) report data on a more frequent basis, ideally daily.

Response: The Air District agrees with the commenter regarding the need for improved public access to the fenceline monitoring data. Included in the Air District's December 22, 2022 letter to the refineries interpreting the Guidelines are standard procedures for reporting quarterly emissions data and related information, which include a requirement to provide data in CSV format, among many other requirements. Many of these reporting requirements are not reflected in the AMPs or QAPPs submitted by the refineries and these deficiencies are included in the notices of deficiency sent to the refineries on July 19, 2023.

With regard to the commenter's suggestion that data be reported more frequently, we will note that data are currently reported on the refinery fenceline monitoring websites in near real time, typically within ten minutes of a measurement. Final, quality assured data sets are currently provided to the Air District on a quarterly basis, which we believe is a reasonable period of time given the amount of data that must be reviewed and the steps involved in reviewing it.

The commenter's request for access to the fenceline monitoring data via an API is beyond the scope of the current review. However, the Air District agrees with the commenter that such access is needed and is considering options for providing access to the quarterly data by such means.

Data Should be Summarized and Presented Using Non-Technical Language

Bruce Kaplan

Comment: The commenter states that the data should be presented in an understandable manner for non-technical members of the community. This includes providing summarized and aggregated data on a dashboard, along with appropriate thresholds. Refineries should also be scored on a weekly basis and compared with each other in terms of compliance. In addition, summary data should be widely distributed to residents in range of these emissions.

Response: The Air District agrees with the commenter that the fenceline monitoring data should be presented to the public in an understandable manner. Websites operated by each refinery currently do summarize the data on a dashboard as the commenter has suggested. Links to those websites are available from the Air District's website at <https://www.baaqmd.gov/plans-and->

[climate/emission-tracking-and-monitoring/fenceline-monitoring-plans](#) and any member of the public may view them regardless of their proximity to the refineries or their emissions.

4.0 COMMENTS REGARDING THE AIR MONITORING GUIDELINES FOR REFINERIES

No Opportunity for Public Comment on October 2021 and December 2022 Specifications

Western States Petroleum Association

Comment: The commenter states that the Air District did not provide opportunity for public comment on the specifications issued in October 2021 and December 2022. A 60-day public comment period was agreed upon following a 2018 Settlement Agreement and incorporated into the 2018 amendment for Rule 12-15. Furthermore, the commenter states that if the Air District wishes to place that degree of weight on its October 2021 and December 2022 letters, Board approval is required to trigger a year-long period for refineries to submit updated plans, as identified in Section 12-15-403.

Response: The Air District disagrees with the commenter that the October 2021 and December 2022 letters (guidance) constitute revisions to the Air Monitoring Guidelines for Petroleum Refineries published pursuant to Section 12-15-406 in April 2016 (Guidelines). The October 2021 and December 2022 letters are guidance issued by the Air District reflecting the Air District's longstanding, consistent interpretation of the requirements of Air District Regulation 12-15 (Regulation 12-15) and the Guidelines, which interpretation is based on the Air District's specialized experience and information implementing the federal and California Clean Air Acts and monitoring requirements such as those at issue here.

Since the Guidelines were originally adopted in 2016, refinery operators have been required to measure hydrogen sulfide concentrations at the refinery fencelines with open path technology capable of measuring in the parts per billion range (Guidelines, pp. 4-5). The 2016 Guidelines have also always required development of a quality assurance project plan (QAPP) that follows EPA guidelines and sets forth methods and procedures to ensure the data produced by the fenceline monitoring systems are of high enough quality, and representative enough, to meet the goals of Regulation 12-15 (Guidelines, p. 10). This includes a broad range of methods and procedures related to data collection, acceptance, validation, management, and reporting (Guidelines, p. 10).

As described in guidance from EPA,¹ the purpose of a QAPP is to "provide a *project-specific* 'blueprint' for obtaining the type and quality of environmental data needed for a specific decision or use" (p. 1, emphasis added). Because a QAPP (and, by extension, the air monitoring plan it accompanies) must be project-specific, so too must specifications about the system or systems in question. The contents of the Air District's October 2021 and December 2022 letters merely represent the Air District's interpretation of the system performance specifications and procedures that are necessary in this case to achieve high quality and representative data for hydrogen sulfide. Issuance of interpretive guidance such as this is well within the Air District's authority; among other bases of authority, Health and Safety Code section 40702 empowers the Air District to, in addition to adopting rules and regulations, "do such acts as may be necessary or proper to execute the

¹ United States Environmental Protection Agency. (2001). EPA Requirements for Quality Assurance Project Plans [EPA QA/R-5].

powers and duties granted to, and imposed upon, the district by" law. Though the interpretive guidance was discussed with stakeholders, such interpretive guidance is not required to go through a public comment process, nor must it be approved by the Air District's Board of Directors, since it merely interprets the underlying rule and Guidelines that did go through a public process and were approved by the Board of Directors. The 2018 Settlement Agreement referenced by the commenter does not contain any public process requirements for such interpretive guidance, and so does not change the status of the law on that; the 2018 Settlement Agreement instead requires, as relevant here, certain amendments to Regulation 12-15, which the Air District already made.

Finally, Air District Regulation 12-15-403 requires refinery owners and/or operators to submit an updated site-specific air monitoring plan to the Air District within one year of approval of updated air monitoring guidelines published by the APCO under Section 12-15-406 by the Air District's Board of Directors. This provision is not triggered where the Air District issues interpretive guidance such as the October 2021 and December 2022 letters.

No Open-Path Fenceline Monitoring Equipment Can Meet Air District Specifications

Western States Petroleum Association

Comment: The commenter states that the 10/6/2021 letters to refineries identified that their specifications were based on a "6 month proof of performance field study," but the Air District has not provided any evidence that the specification for an "accuracy of 2% of reading and repeatability of 1% of reading for a range of 3 to 5000 ppb H₂S" can be met by any open-path monitoring vendor's equipment. The commenter believes that no instrument can reliably demonstrate compliance with both of those specifications under real-world fenceline conditions, nor are they capable of meeting the marketed 15% accuracy and precision requirements specified in the December 2022 letters. Furthermore, the commenter states that since there are no publicly available data on which to gauge long-term performance of open-path fenceline monitoring, refineries should be encouraged to try out different types of monitoring equipment and data should be collected on monitor performance issues.

Response: Information is publicly available that shows the 15% accuracy and precision specifications in the Air District's 12/22/2022 letter can be achieved in practice under real-world operating conditions. A paper presented at the 2023 Analyzer Technology Conference in Galveston, TX² describes a technology evaluation of the Airoptic open-path TDL air monitoring system that was performed "to evaluate the performance of the open-path H₂S TDL in a real-world setting to determine if it can meet the specific performance criteria established by BAAQMD for use in their Rule 12-15 fence line air monitoring program." The data presented show the accuracy and precision of the system to be well within the required specifications (see Table 3), and the paper concluded that the system "met and/or exceeded accuracy and precision requirements." Before being approved for presentation at the conference, the paper was peer reviewed by four industry experts and it is a credible source of information showing that the Air District's specifications can be achieved in practice by at least one commercially available system. The Air District encourages the refineries to collect data on monitor performance over the long-term as the commenter has suggested but

² Gamiles, D., Stevenson, E., Gordon, C., Kuiken, T., & Kluczynski, P. (2023). *Innovative Open-path Tunable Diode Laser for Monitoring Hydrogen Sulfide Gas at the Fence Line Update* [Conference presentation]. Analyzer Technology Conference, Galveston, TX.

that endeavor does not relieve the refineries of their obligation to comply with Rule 12-15 in the meantime.

Technical Specifications Delayed

Western States Petroleum Association

Comment: The commenter states that the Bay Area refineries requested technical specification from staff on the required open-path tunable diode laser fenceline monitors for H₂S. Substantial effort and expense is associated with this process, but Air District staff did not provide specifications for several years, leading the Air District to issue ten extensions to the deadline for refineries to select an open-path technology from December 2018 to June 2021. The commenter states that open-path monitoring for H₂S at ppb levels in the ambient air is not a common practice anywhere in the world and this novel technology was a key reason for the extensions.

Response: The commenter is correct that that from 2018 to 2021, the Air District sent the refineries a series of letters extending the deadline for selection of an H₂S monitoring method. As the commenter stated, the Air District afforded the refineries these extensions to encourage the use of open path H₂S monitoring and allow more time for the development and validation of commercially available systems that achieve the required high quality and representative data for hydrogen sulfide. The Air District issued its last extension on October 6, 2021 after a proof of performance field study indicated the technology had advanced to the point that open path monitoring that achieves the required high quality and representative data for hydrogen sulfide could be successfully implemented. In that October 6, 2021 extension, the Air District gave the refineries up to 15 months to begin operating a TDL system for H₂S that met specifications and performance criteria outlined in the same letter.

Air District Did Not Approve or Disapprove Candidate Monitoring Technologies

Western States Petroleum Association

Comment: The commenter states that on October 6th, 2021, the Air District issued letters to the refineries that identified specifications, stated that the final deadline for installation of an open path H₂S monitoring systems would not be extended further, and set forth a schedule for the refineries to select, purchase, install, and operate open-path H₂S technology. The commenter states that monitor specifications were provided to the Air District for approval as specified in the 10/6/2021 letters, but the Air District did not approve or disapprove any of the candidate technologies prior to the required purchase date. The commenter finally says that on 11/17/2022, the Air District verbally identified they might ask four of the five refineries to replace existing H₂S monitors with those from another vendor.

Response: Since they were originally adopted in 2016, the Guidelines have required open path monitoring for H₂S at ppb levels. From 2018 to 2021, the Air District sent the refineries a series of letters extending the deadline for selection of an H₂S monitoring method. The Air District afforded the refineries these extensions to encourage the use of open path H₂S monitoring and allow more time for the development and validation of commercially available systems that achieve the required

high quality and representative data for hydrogen sulfide. The Air District issued its last extension on October 6, 2021, after a proof of performance field study indicated the technology had advanced to the point that open path monitoring that achieves the required high quality and representative data for hydrogen sulfide could be successfully implemented. In that extension, the Air District gave the refineries up to 15 months to begin operating a TDL system for H₂S, which met specifications and performance criteria that were outlined in the same letter. The milestones in the October 6, 2021 letter (including those calling for system specifications to be provided to the Air District) were based on a premise that the refineries would work with the Air District to implement what was then a newly emerging technology, and that the refineries would act in good faith to meet the performance specifications outlined in the October 2021 letter. While the refineries may have proceeded to purchase equipment without the Air District's approval, those purchases do not now relieve the refineries of their obligations to comply with Regulation 12-15.

As a final matter, the Air District has not asked or required any refinery to purchase monitoring systems from a specific vendor. Instead, the Air District provided specifications that monitoring systems must meet in order to comply with Regulation 12-15 and the Guidelines.

Significant Changes in Revised Specifications

Western States Petroleum Association

Comment: The commenter states that there were significant changes in the revised specifications for the open-path H₂S instruments between October 2021 and December 2022. Furthermore, the revised specifications issued in December 2022 was months after the purchase deadline and only days before the operational deadline, and by this time the refineries had already fully installed and operated their FLMs.

Response: As previously discussed, the Guidelines have always required open path monitoring for H₂S at ppb levels, since they were originally adopted in 2016. From 2018 to 2021, the Air District sent the refineries a series of letters extending the deadline for selection of an H₂S monitoring method to allow time for the development and validation of commercially available systems. The Air District issued its last extension on October 6, 2021, after a proof of performance field study indicated the technology had advanced to the point that open path monitoring that achieves the required high quality and representative data for hydrogen sulfide could be successfully implemented. In that extension, the Air District gave the refineries up to 15 months to begin operating a TDL system for H₂S, which met specifications and performance criteria that were outlined in the same letter. It is correct that the Air District sent the refineries a letter with revised specifications on December 22, 2022 but the purpose of that letter was to *relax* specifications related to the accuracy and precision of the system. In particular, while the October 2021 letter stated that the TDL should have an accuracy of 2% and repeatability (precision) of 1%, the December 2022 letter revised both of those specifications to 15%, which is less stringent. As noted in the December 2022 letter, this was based on newly available data acquired by the Air District, which showed that the revised standards were more readily achievable. While the commenter claims that other details added to the December 2022 letter related to the limit of quantitation and concentrations used for system calibrations and bump tests are "significant changes," that claim is unsupported by the commenter and the Air District does not agree. Particularly with respect to the limit of quantitation, the Air District has been clear in previous conversations with the refineries that any TDL used should be able to

accurately and reliably measure H₂S in the range of 3 to 25 ppb. That representation is consistent with the contents of the December 2022 letter.

Lastly, the comment presupposes that the systems purchased by the refineries after the Air District issued the October 2021 letter would have complied with Regulation 12-15 and the Guidelines had the Air District not issued the December 2022 letter, which is not the case. It is the Air District's understanding, based on information received from four of the refineries, that the fenceline monitoring systems they purchased did not meet the October 2021 standard at the time of their purchase, and do not meet that standard now, and so never complied with the requirements in Regulation 12-15 or the Guidelines. The refineries' air monitoring plans are also deficient with a number of other requirements in Regulation 12-15 and the Guidelines, as discussed in the notices of deficiencies issued by the Air District.

Multiple Public Records Requests Submitted

Western States Petroleum Association

Comment: The commenter states that WSPA and its contractor submitted three California Public Records Act (PRA) requests asking for the performance data used to support the specifications, questions about the details of the specification, and documents and communications related to various aspects of the specifications. However, the Air District gave verbal responses, provided a qualitative definition instead of a quantitative definition, stated they would be responding to the March 2023 request, and did not respond to the request for performance data.

Response:

This comment does not relate to the Air Monitoring Plans' compliance with Air District Regulation 12-15. The Air District provided all information in its October 2021 and December 2022 guidance about what specifications the refineries' air monitoring systems needed to meet to comply with Regulation 12-15 and the Guidelines. Furthermore, the Air District is committed to public disclosure, transparency, and compliance with the California Public Records Act.

No Standards for Open-Path Monitors

Western States Petroleum Association

Comment: The commenter states there are important technical details regarding the system specifications that the Air District has not yet identified. The commenter also states that the October 2021 and December 2022 letters refer to "a standardized method, such as EPA Method TO-16, or a method developed by a credible standardized body, such as the ASTM International or the International Organization for Standardization." However, the commenter did not find any ISO standards specific to open-path monitors and the TO-16 and ASTM documents were ambiguous.

Response: The comment is vague about what system specifications have yet to be identified. The October 6, 2021 letter states that system operation based on standardized methods is recommended, and the December 22, 2022 letter states it as optional. To the extent standardized methods and other technical details are established, they should be used and referenced in the AMP and QAPP. If they are not established, these technical details should be fully described in the AMP and QAPP for Air District review and approval.

No Quantitative Definition Provided for Limit of Quantitation

Western States Petroleum Association

Comment: The commenter states that the December 2022 letters replaced the "detection limit" specification with a "Limit of Quantitation (LOQ)" specification, but did not provide a quantitative definition of the term.

Response: The Air District's December 22, 2022 letter explained that the LOQ is the lowest concentration at which an analyte can not only be reliably detected, but at which predefined goals for accuracy and precision are met. As stated above, the Air District has been clear in previous conversations with the refineries that any TDL used should be able to accurately and reliably measure H₂S in the range of 3 to 25 ppb. That representation is consistent with the contents of the December 2022 letter. In the absence of a quantitative definition specified by the Air District, it is incumbent upon the refineries to put forth a definition as the owners and operators of the monitoring equipment and as the authors of the AMPs and QAPPs.

Completeness Criteria Does Not Account for Maintenance Activities

Western States Petroleum Association

Comment: The commenter states that Attachment 3 to the Air District's December 2022 letter specified a "Quarterly % Completeness" formula that does not account for planned or unplanned maintenance activities, which would be recorded as incomplete data periods. In addition, the commenter believes that it is premature to establish a 90% data completeness requirement for open-path H₂S instruments.

Response: The requirement that instrumentation used for fence-line monitoring must meet a minimum of 75 percent completeness on an hourly basis, 90 percent of the time based on annual quarters is clearly established in the Guidelines. While the commenter stated that it is premature to establish such a requirement for open-path H₂S systems, the commenter did not explain why and the Air District cannot respond further to this claim. The Air District does not believe it is premature because this is feasible and is necessary to meet the data representativeness and quality goals of Regulation 12-15 and the Guidelines.

The commenter is correct that the quarterly percent completeness formula specified in Attachment 3 to the Air District's December 22, 2022 letter does not account for planned or unplanned maintenance activities. Recognizing that open-path measurements are affected by low-visibility conditions like dense fog, the Guidelines state that data from such periods will not count against data completeness requirements, as long as appropriate meteorological measurements document time periods when those conditions exist. However, the Guidelines do not similarly allow for the exclusion of invalid or missing data associated with maintenance activities; the Guidelines also do not allow exclusions for QA/QC activities, such as instrument calibrations or bump tests.

Open-Path Monitors Measure Path-Averaged Concentrations in ppm-meters

Western States Petroleum Association

Comment: The commenter recognizes the Air District's interest in concentrations measured in ppb, but open-path monitors are measuring path-averaged concentrations in ppm-meters. This presents an issue with the Air District's instrument specification because they are in units of path-average ppb. The exact same instrument sharing two separate reflectors at different distances will provide different path-average ppb detection limit or LOQ values for different paths. Although longer pathlength may result in lower path-average ppb, there are tradeoffs to lengthening or shortening pathlengths.

Response: The Air District is aware that the path length influences the path average concentration. It is expected that TDL systems used to monitor H₂S along the existing paths at all of the Bay Area refineries have an LOQ that ranges from 2-25 ppb depending on environmental and operational conditions. While the commenter stated that there are tradeoffs to lengthening or shortening path lengths, the commenter did not elaborate on what those tradeoffs are and how they pertain to the systems and paths in question. As a result, we cannot respond further to the comment.

5.0 FACILITY-SPECIFIC COMMENTS

Chevron Plans Should be Rejected

Benicia Community Air Monitoring Program

Comment: The commenter states that the Chevron plans should be rejected and the refinery fined to the maximum extent possible until all Air District requirements are met. In particular, the commenter notes that the Chevron plans do not:

- (1) Adequately address issues 1 and 2 of the letter dated 7/15/2022, among others.
- (2) Define why the Method Detection Limit (MDL) method of three standard deviations of the last seven five-minute averages should be utilized.
- (3) Adequately address a large majority of issues raised in the letter dated 12/22/2022, including the requirement for an average of 15 ppb Quantification Detection Limit (QDL) and 15% accuracy and precision to be integrated into the QAPP.

Response: The Air District has determined that Chevron's draft revised AMP does not meet the requirements of Section 12-15-403, including, as the commenter notes, several issues identified in our July 15, 2022 and December 22, 2022 letters that have not been adequately addressed. All of the outstanding deficiencies in Chevron's AMP have been included in a final notice of deficiency (NOD), which the Air District sent to Chevron on July 19, 2023. Chevron has 45 days from receipt of that NOD to correct the identified deficiencies and resubmit a final revised AMP. If the Air District determines Chevron failed to correct any deficiency identified in the notification, the Air District will take appropriate steps as provided by Rule 12-15.

Phillips 66 Plans Should be Rejected

Benicia Community Air Monitoring Program

Comment: The commenter states that the Phillips 66 plans should be rejected and the refinery fined to the maximum extent possible until all Air District requirements are met. In particular, the commenter notes that the Phillips 66 plans do not:

- (1) Adequately address a large majority of the issues raised in the letter dated 8/15/2022.
- (2) Define how the MDL will be calculated.
- (3) Adequately address a large majority of the issues raised in the letter dated 12/22/2022, including the requirement for an average of 15 ppb QDL and 15% accuracy and precision to be integrated into the QAPP.

Response: The Air District has determined that Phillips 66's draft revised AMP does not meet the requirements of Section 12-15-403, including, as the commenter notes, several issues identified in our August 15, 2022 and December 22, 2022 letters that have not been adequately addressed. All of the outstanding deficiencies in Phillips 66's AMP have been included in a final notice of deficiency (NOD), which the Air District sent to Phillips 66 on July 19, 2023. Phillips 66 has 45 days from receipt of that NOD to correct the identified deficiencies and resubmit a final revised AMP. If the Air District determines Phillips 66 failed to correct any deficiency identified in the notification, the Air District will take appropriate steps as provided by Rule 12-15.

Tesoro Plans Should be Rejected

Benicia Community Air Monitoring Program

Comment: The commenter states that the Tesoro plans should be rejected and the refinery fined to the maximum extent possible until all Air District requirements are met. In particular, the commenter notes that the Tesoro plans do not:

- (1) Adequately address the differences between technologies.
- (2) Adequately address a large majority of issues raised in the letter dated 7/15/2022.
- (3) Adequately outline how an MDL will be calculated.
- (4) Adequately address a large majority of issues raised in the letter dated 12/22/2022, including the requirement for an average of 15 ppb QDL and 15% accuracy and precision to be integrated into the QAPP.

Response: The Air District has determined that Tesoro's draft revised AMP does not meet the requirements of Section 12-15-403, including, as the commenter notes, several issues identified in our July 15, 2022 and December 22, 2022 letters that have not been adequately addressed. All of the outstanding deficiencies in Tesoro's AMP have been included in a final notice of deficiency (NOD), which the Air District sent to Tesoro on July 19, 2023. Tesoro has 45 days from receipt of that NOD to correct the identified deficiencies and resubmit a final revised AMP. If the Air District determines Tesoro failed to correct any deficiency identified in the notification, the Air District will take appropriate steps as provided by Rule 12-15.

Valero Plans Should be Rejected

Benicia Community Air Monitoring Program

Comment: The commenter states that the Valero plans should be rejected and the refinery fined to the maximum extent possible until all Air District requirements are met. In particular, the commenter notes that the Valero plans do not:

- (1) Adequately address the differences between technologies.
- (2) Adequately address a large majority of issues raised in the letter dated 7/15/2022.
- (3) Adequately outline how an MDL will be calculated.
- (4) Adequately address a large majority of issues raised in the letter dated 12/22/2022, including the requirement for an average of 15 ppb QDL and 15% accuracy and precision to be integrated into the QAPP.

Response: The Air District has determined that Valero's draft revised AMP does not meet the requirements of Section 12-15-403, including, as the commenter notes, several issues identified in our July 15, 2022 and December 22, 2022 letters that have not been adequately addressed. All of the outstanding deficiencies in Valero's AMP have been included in a final notice of deficiency (NOD), which the Air District sent to Valero on July 19, 2023. Valero has 45 days from receipt of that NOD to correct the identified deficiencies and resubmit a final revised AMP. If the Air District determines Valero failed to correct any deficiency identified in the notification, the Air District will take appropriate steps as provided by Rule 12-15.

6.0 OTHER COMMENTS

Plans Should be Approved

Western States Petroleum Association

Comment: The commenter believes that all five refineries' AMPs should be evaluated against and approved pursuant to the Air District's Board-approved Air Monitoring Guidelines for Petroleum Refineries (April 2016). The refineries have implemented fence-line monitoring requirements as outlined in Rule 12-15.

Response: The Air District agrees with the commenter that the AMPs must be evaluated against the Air District's April 2016 Guidelines, including as interpreted by District interpretive letters, as well as against Rule 12-15. The Air District disagrees that the refineries have implemented fence-line monitoring requirements as outlined in Rule 12-15 and has stated the basis for that determination in notices of deficiency sent to each refinery on July 19, 2023. The Air District cannot approve the refineries' AMPs unless the refinery corrects each deficiency identified in its respective notice of deficiency as required by Rule 12-15 and the Guidelines, including as interpreted by District interpretive letters.

Refineries Not Meeting Requirements Using Same Monitoring Management Company

Benicia Community Air Monitoring Program

Comment: The commenter is concerned that the four refineries that do not meet minimum Air District requirements use the same monitoring management company and Unisearch TDL.

Response: The commenter's concern is noted. Provided the refineries comply with the requirements of Rule 12-15, there is no prohibition on multiple refineries using the same monitoring consultant or system.

Phase Out Refineries

Nora Roman

Comment: The commenter provides support for Rule 12-15 as a temporary measure but states the long-term goal should be to close down all refineries and fossil fuel extraction and use.

Response: The commenter's support for Rule 12-15 is noted. The commenter's remaining comments are beyond the scope of the public comment period for the revised air monitoring plans.

Refineries Should Not Meet Obligations Using Carbon Capture and Storage and Install Scrubbers

David Bezanson

Comment: The commenter states that refineries should not meet their obligations to decrease greenhouse gas emission by using carbon capture and storage and that they should pay for and install the most effective scrubbers.

Response: The commenter's comments are beyond the scope of the public comment period for the revised air monitoring plans.

Public Deserves to Know What They are Breathing and What's in Their Gardens

Ben Stiegler

Comment: The commenter states that the public deserves to know what they are breathing and what's going into their gardens (e.g., from the 2022 Thanksgiving release).

Response: The Air District generally agrees with the commenter's desire for greater public knowledge about air quality; a goal and requirement of the fenceline monitoring requirements in Rule 12-15 is to make data about concentrations of certain air pollutants at the refinery fencelines available to the public. The remainder of the commenter's comments are beyond the scope of the public comment period for the revised air monitoring plans.

City of Benicia Has Not Received Funds from Violations

Judith Sullivan

Comment: The commenter states that the City of Benicia has not received funds from violations.

Response: This comment is beyond the scope of the public comment period for the revised air monitoring plans.