SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

DRAFT STAFF REPORT

Proposed Amendments to Rule 4101 (Visible Emissions)

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San Joaquin Valley
UNIFIED AIR POLLUTION CONTROL DISTRICT

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I. SUMMARY

The San Joaquin Valley Unified Air Pollution Control District (District) is committed to protecting public health for all residents in the San Joaquin Valley (Valley) through efforts to meet health-based state and federal ambient air quality standards with efficient, effective, and entrepreneurial air quality management strategies. In response to the latest federal mandates and to improve quality of life for Valley residents, the District has developed and implemented multiple generations of rules on various sources of air pollution. Valley businesses are currently subject to the most stringent air quality regulations in the nation. Since 1992, the District has adopted over 650 rules to implement an aggressive on-going control strategy to reduce emissions in the Valley, resulting in air quality benefits throughout the Valley. Similarly, the California Air Resources Board (CARB) has adopted increasingly stringent regulations for mobile sources. Together, these efforts represent the nation's toughest suite of air pollution emissions controls and have greatly contributed to reduced ozone and particulate matter concentrations across the Valley.

Particulate matter (PM) is a generic term used to describe a complex group of air pollutants that vary in size and composition. Particle size determines the deposition points along the respiratory system. Particles larger than 10 microns in aerodynamic diameter are deposited almost entirely in the nose and throat area, whereas fine and ultrafine particles are able to reach the alveoli (air spaces) deep in the lungs. PM10 pollution is a serious health issue in the San Joaquin Valley Air Basin (SJVAB). PM10 can be inhaled through the upper respiratory airways and deposited in the lungs, causing serious health problems and the increased likelihood of death from other causes. A smaller fraction, commonly referred to as PM2.5, is of special concern to health. These finer particles are easily inhaled deeply into the lungs where they can be absorbed into the bloodstream or remain embedded for long periods of time. Some subpopulations are at a higher risk for the effects of PM. EPA has established ambient air quality standards for PM10 to protect public health and welfare, one reflecting a daily (24-hour) concentration and one reflecting an annual concentration. Enforcement of Rule 4101 aids in the limitation and reduction of harmful pollutants, such as Particulate Matter, affecting residents within the SJVAB.

The proposed amendments to Rule 4101 are limited to updating definitions to increase flexibility in the manner in which visible emissions observers are required to be trained and certified, while maintaining all existing rule requirements. Specifically, the rule will define EPA (The United States Environmental Protection Agency) and revise the definition of "Observer" to remove the reference to the California Air Resources Board as the sole provider of training and certification, instead allowing certification consistent with the requirements of EPA Method 9 or any EPA-approved equivalent method. This change is being made due to reduced training dates and locations offered by CARB in recent years, creating logistical and cost burdens, along with potential impacts to the timeliness of services provided by District Staff. This change is also being made in light of a new EPA-approved alternative now available, ALT-152A, which is a virtual reality

(VR)-based method that has proven to be equally accurate while being more easily accessible.

II. BACKGROUND

A. EPA Method 9

EPA Method 9 (Method 9) is a federal test method developed by EPA for the visual determination of opacity. Method 9 is used to evaluate visible emissions from stationary sources, such as smokestacks, vents, or other emission points. Opacity represents the degree to which the visible emissions obstruct the transmission of light and is expressed as a percentage, with higher percentages indicating more visible emissions. The method provides a standardized approach for evaluating visible emissions and is commonly used by regulatory agencies and facilities to determine compliance with opacity limits established in District permits and air quality regulations. During a Method 9 observation, a trained observer visually estimates plume opacity in 5-percent increments at 15-second intervals, typically collecting at least 24 observations over a six-minute period and averaging the readings to determine the overall opacity.

Since the method relies on visual judgment, EPA Method 9 observations must be conducted by trained and certified observers. Certification is typically obtained through a training program commonly referred to as “Smoke School,” which provides instruction on visible emissions theory, observation procedures, and documentation requirements. After completing the training portion, observers must pass a visual field test in which they estimate the opacity of a series of smoke plumes of known opacity generated by a calibrated smoke generator. To successfully obtain certification, the observer’s estimates must fall within the accuracy limits specified by the method.

EPA Method 9 certification is valid for six months, after which observers must successfully complete another visual certification test to maintain their qualification. This periodic recertification ensures that observers maintain the accuracy and consistency needed for regulatory compliance determinations. As a result, Method 9 provides regulatory agencies and facilities with a relatively simple and widely accepted technique for documenting compliance with visible emissions standards.

In California, training and certification for Method 9 observers has traditionally been performed by the California Air Resources Board (CARB). For many years CARB offered the training to regulatory agency and industry personnel at numerous locations throughout the state, including in close proximity to the District’s three regional offices. In recent years, CARB has scaled back the number of locations where smoke school and visible emissions recertification is held to only a few locations each year. This has greatly increased the travel time and expense to air districts and facilities that rely on CARB for visible emissions observer certification, which also has the potential for impacting the responsiveness of District services. Since 2020, staff from the District’s Modesto and Fresno offices have had to travel to either Sacramento or Bakersfield

every six months for recertification. In more remote parts of the state, some air districts have brought in other approved training providers from out of state to certify their staff.

B. Approved Alternative Method ALT-152A

EPA Alternative Test Method ALT-152A is a relatively new, broadly applicable alternative method approved by EPA for training and certifying visible emissions observers who perform opacity determinations in accordance with EPA Method 9. Rather than requiring participants to attend a traditional in-person "Smoke School," ALT-152A allows certification using a virtual reality (VR)-based training and testing system that presents simulated emission plumes with known opacity values. The method was approved by EPA in 2023 after demonstrating that observers trained and certified using the VR system can determine plume opacity with accuracy comparable to observers certified through conventional Smoke School programs.

Under ALT-152A, trainees must first complete instructional coursework similar to a traditional Smoke School. Then for certification, observers must estimate the opacity of simulated white and black smoke plumes displayed through the VR headset. The program uses videos of plumes generated by calibrated smoke generators to replicate the viewing conditions used in traditional Method 9 certification. Participants must still estimate opacity values in 5% increments within the same allowable accuracy limits required by Method 9. Once successfully completed, the observer receives EPA Method 9 certification equivalent to that obtained through in-person Smoke School training.

ALT-152A was developed to provide a more flexible and accessible option for Method 9 certification while maintaining the accuracy and defensibility of visible emissions observations. The alternative method enables agencies and industry personnel to obtain or maintain certification without the logistical constraints of traveling to a Smoke School location, while still meeting EPA requirements for training and certification of visible emissions observers.

C. Current District Rule 4101

Rule 4101 was last amended in 2005 in order to make Rule 4101 fully approvable for inclusion in the State Implementation Plan (SIP). The District, at the time, was classified as a serious PM10 nonattainment area for the health-based air quality standards established by the federal Clean Air Act (CAA), the worst possible classification, due to the significant air quality challenges in the Valley. The District was also classified as severe nonattainment for the State of California's PM10 standard.

The primary objective of the 2005 rulemaking was to correct the deficiencies cited by EPA in order to make Rule 4101 fully approvable for inclusion in the State Implementation Plan (SIP). During the rulemaking process, the District received comments from CARB stating Rule 4101 defined opacity and specified opacity limits,

but did not specify a method for determining opacity, such as EPA Method 9. Additionally, they commented that the rule indicated certification of human observers was required, but no certifying agency, such as CARB, was identified. To adress these comments from CARB, the District added reference to EPA Method 9 for determining opacity and defined an observer as: *"a human observer certified and trained by the California Air Resources Board…"*.

At the time of the 2005 amendments, CARB was the only training provider operating a Smoke School within the District. As a result, the rule language was written to specifically reference CARB as the training provider. However, neither EPA nor CARB prohibits other qualified training providers from offering visible emissions observer certification for EPA Method 9. The reference to CARB was not intended to limit District staff or industry personnel to a single training provider, but rather reflected the availability of qualified training at the time.

III. PROPOSED AMENDMENTS TO RULE 4101

District staff are recommending that the purpose, applicability, exemptions, and the majority of the requirements in Rule 4101 be maintained. The proposed amendments to the rule include changes to two definitions within the rule as further discussed below.

Definitions (Section 3.0)

Section 3.2 – EPA

The District is proposing to define "EPA" as, "The United States Environmental Protection Agency."

Section 3.3 – Observer

The District is proposing to modify the definition of, "*Observer"* to clarify that the required training and certification for human observers must be based on the procedures specified in EPA Method 9, or an EPA-approved equivalent method, rather than being limited to a specific training provider. This change provides additional flexibility for the District and regulated sources by allowing the use of new or emerging certification technologies, provided the training and certification are performed in accordance with EPA requirements for Method 9 observer certification.

Specifically, the definition would remove CARB as the sole provider of such trainings, and make it possible for implementation of approved alternative certification methods, such as ALT-152A.

IV. ANALYSES

A. Emission Reduction Analysis

Proposed amendments to District Rule 4101 would allow greater flexibility to District and industry staff for training and certifying human observers to be qualified to read visible emissions in accordance with EPA Method 9. The proposed amendments would not change the applicability, or limitations on visible emissions limits set by the current rule. Therefore, the proposed amendments to Rule 4101 will not cause any measurable overall change in future year's emissions reductions.

B. Cost-Effectiveness Analysis

Pursuant to California Health & Safety Code (CH&SC) Section 40920.6(a), prior to adopting rules or regulations to meet the requirement for best available retrofit control technology (BARCT), the District shall perform a cost effectiveness analysis. The proposed amendments do not implement BARCT and therefore a cost effectiveness analysis is not required.

C. Socioeconomic Analysis

Pursuant to CH&SC Section 40728.5(a), the District is required to conduct a socioeconomic analysis of proposed rules or rule amendments that will significantly affect air quality or emissions limitations prior to rule adoption. The proposed amendments have neither effect, and therefore a socioeconomic analysis is not required for this rule amendment project.

D. Rule Consistency Analysis

Pursuant to CH&SC Section 40727.2 (g), a rule consistency analysis of the proposed rule is required if the proposed rule strengthens emission limits or imposes more stringent monitoring, reporting, or recordkeeping requirements. The proposed rule does not strengthen emission limits or impose more stringent monitoring, reporting, or recordkeeping requirements; therefore, a rule consistency analysis is not required.

E. Environmental Impact Analysis

According to Section 15061 (b)(3) of the CEQA Guidelines, a project is exempt from CEQA if, "(t)he activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA." As such, substantial evidence supports the District's assessment that the rule amendment will not have any significant adverse effects on the environment.

Furthermore, the rule amendment is an action taken by a regulatory agency, the San Joaquin Valley Air Pollution Control District, as authorized by state law to assure the maintenance, restoration, enhancement, or protection of air quality in the San Joaquin Valley where the regulatory process involves procedures for protection of air quality. CEQA Guidelines §15308 (Actions by Regulatory Agencies for Protection of the Environment), provides a categorical exemption for "actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment. Construction activities and relaxation of standards allowing environmental degradation are not included in this exemption." No construction activities or relaxation of standards are included in this rule amendment.

Therefore, for all the above reasons, the rule amendment is exempt from CEQA. Pursuant to Section 15062 of the CEQA Guidelines, District staff will file a Notice of Exemption upon Governing Board approval of rule amendment.

V. RULE DEVELOPMENT PROCESS

The District conducted a public process for developing proposed Rule 4101. Information about public meetings was shared with members of the public, affected sources and other interested stakeholders.

The District conducted a public workshop on February 24, 2026, to present, discuss, and receive comments on the proposed rulemaking. Workshop announcements, workshop materials, and public notices were provided in both English and Spanish, and the District provided simultaneous Spanish interpretation during the public workshop.

Throughout the rule development process, District staff solicited feedback and comments from the public. At this time no public comments have been received.

The proposed rule was published for 30-day public review and comment on March 17, 2026, prior to the public hearing to consider the adoption of the rule by the District Governing Board.

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