

Communication from Public

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Comments for Public Posting: Please find attached our team's response to the appellants argument for the above referenced case.



DOUGLASKIM+ASSOCIATES,LLC

To: File
From: Douglas Kim, AICP
Date: February 3, 2025
Re: Air Quality Supplemental Memorandum
for 638 South Berendo Street Project

This memorandum provides responses to comments in the November 8, 2024 letter from Lozeau Drury LLP on behalf of appellant Supporters Alliance for Environmental Responsibility (Appellant) and the attached purported technical reports addressing the air quality analyses prepared for the Class 32 Categorical Exemption relied on by the City for the 638 South Berendo Street project (Project). The technical reports include a November 4, 2024 air quality Health Risk Assessment prepared by Baseline Environmental Consulting (Baseline HRA) and a September 18, 2024 Indoor Air Quality memorandum addressing alleged formaldehyde gas impacts prepared by Francis J. Offermann of Indoor Environmental Engineering (Offermann Report).

1. Lozeau Drury Letter, page 4, Comment #1: Comment: The Project's will have significant adverse effects related to air quality health risks, precluding reliance on the Infill Exemption.

Response to Comment

The comment letter includes a November 4, 2024 Health Risk Assessment prepared by Baseline Environmental Consulting. The results of the Appellant's purported Baseline HRA are misleading and inaccurate, falsely inflating reported health risks with unreasonable assumptions, and presenting unsubstantiated conclusions that are not supported by sufficient information to enable a full and fair assessment of the analysis. Specifically, the Baseline HRA is limited to one brief information table summarizing some inputs to the AERMOD model, however, the document omits other key information and inputs that are important variable components of valid health risk modeling. This includes omitting how the "area source" was coded into the model and omitting the meteorological data used to disperse emissions. A valid health risk assessment must tailor these factors to the actual environment and must disclose how it did so to enable a proper assessment of the validity of the modeling. Because it does not disclose the assumptions underlying these key inputs to its modeling analysis, the conclusions reached by the Baseline HRA are unsubstantiated and cannot validly be relied on.

In addition to failing to disclose critical assumptions underlying the conclusions, the input and output assumptions that are disclosed in the Baseline HRA reveal a grossly inaccurate technical analysis that appears specifically engineered to overstate health risks from the relevant source of toxic air contaminants involved here, Diesel Particulate Matter (DPM) emissions from heavy construction equipment and vehicles. As a general matter, the Project is a residential development that is validly

presumed by state and regional air quality agencies to not be a substantial source of toxic air emissions, including DPM.¹ To come to its unsupported contrary conclusion of a significant lifetime cancer risk impact from DPM emissions, Baseline assumes DPM emissions would occur during all stages of construction. However, in reality, DPM emissions would primarily occur during only the demolition and site grading phases of construction, where heavy DPM-emitting construction equipment is used, which total 43 and 60 days of heightened emissions, respectively, as noted in Table 5.1 on Page 54 of the Project AQ Study's Technical Appendix. Otherwise, there are significantly reduced emissions following the construction of building foundations, which would occur approximately 103 days into construction activities when the use of DPM-emitting large construction equipment is substantially reduced. DPM emissions would be even lower during the architectural coating process, which covers 302 days, over half of the overall construction process. The analysis in the Baseline HRA, however, incorrectly assumes 567 days of steady-state DPM emissions comparable to those during the 103 days of demolition and grading activities when DPM emissions are at their highest, thus assuming a duration of heavy DPM emissions over five times greater than what is actually proposed for the Project. This false and overstated assumption in turn drives the unrealistically overstated health risks from DPM emissions in the Baseline HRA.

Further, Baseline's analysis distorts the nature of the potential exposure of residents to DPM emissions, artificially inflating its cancer risk calculations. The Baseline HRA improperly assumes all PM10 emissions generated by the Project constitute DPM emissions, citing an unspecified CalEEMod analysis for its emissions total. This assumption inherently overstates DPM emissions, exposures and cancer risk. First, expert agency guidance indicates that the majority of DPM particles – approximately 90 percent – are smaller PM2.5 particles.² The improper exclusive use of PM10 particles by the Baseline HRA drastically overstates DPM exposures in two key regards. First, substantially more PM10 is emitted by Project construction than PM2.5; the modeling demonstrates that 5 to 10 times more PM10 is emitted during project construction than PM2.5.³ In addition, given the significantly larger size of PM10 particles, the use of PM10 also results in significantly greater exposures by volume over time due to the modeled ingestion of larger particles. These improper assumptions in the Baseline HRA significantly overstate DPM exposures, leading to an overstated and unreliable risk conclusion.

The analysis is also improperly based on an exposure duration for the Maximally Exposed Individual Resident (MEIR) that incorrectly assumes a 2.25-year continuous construction exposure for infants from the third trimester to two years of age when the actual exposure to maximal DPM emissions, as noted above, would only occur for 103 days of construction, overstating exposures by a factor of five. Moreover, by extending the period of exposure of the most sensitive population of children been the first trimester and age of two by a factor of five, it drastically compounds the final risk conclusion because, as admitted in the Baseline HRA, the estimated cancer risks for children can be up to 48 times higher than an adult exposed to the same concentration of DPM. By improperly expanding the duration of exposure by a factor of five for a population with a significantly higher cancer risk profile, the Baseline HRA's risk analysis

¹ SCAQMD, *AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics Hot Spots Information and Assessment Act)*, October 2020; SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, 2002.

² See CARB, *Overview, Diesel Exhaust and Public Health*, found at <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>, accessed January 30, 2025.

³ See CE, Appendix E, at Section 2. Emissions Summary.

misleadingly supercharges the final risk assessment in a manner that is unjustifiable and substantially overstated. These falsely inflated assumptions, which are counter to expert agency guidance and industry practice, have the effect of significantly overstating how much the youngest most vulnerable infants would be exposed to any DPM emissions, substantially increasing the overall risk profile for the MEIR. The unrealistic assumptions built into the Baseline HRA in turn result in falsely inflated exposure of humans to DPM, substantially inflating the Baseline HRA's final cancer risk predictions in an unjustified manner. Thus, like the Offermann Report discussed below, the Baseline HRA stacks various false assumptions that appear specifically engineered to significantly overstate the lifetime cancer risk of alleged toxic exposures caused by what is, in actuality, DPM emissions from a few months of the constructing of a standard residential development that state and regional expert agencies do not consider a significant source of DPM emissions.

- 2. Baseline HRA, Page 3: Comment: "The first false statement included in the CE air quality analysis is...the CalEEMod report included in Appendix E of the CE did not assume all construction equipment would be operating simultaneously for 8 hours per day."**

Response to Comment

The CE does not claim that all equipment would operate continuously throughout the day, nor would that be a reasonable assumption. As noted in the comment letter, the CE assumed that "...all equipment present on the Project Site would be operating simultaneously throughout most of the day, while in all likelihood this would rarely be the case..." As shown in the Technical Appendix, equipment generally is assumed to operate 6-7 hours a day, which is most of the working day. As such, most equipment would operate simultaneously throughout an eight-hour day. Some equipment is assumed to operate less during a day based on its duty cycle and need. Moreover, not all equipment that is used on a project over time is used during the same phase of construction; different phases call for the use of different equipment.

These use assumptions were derived from default values in the CalEEMod air quality model that are based on industry-accepted data and protocols. Specifically, the User's Manual for the CalEEMod model (version 2022.1) emphasizes that *"CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include the United States Environmental Protection Agency's (USEPA) AP-42 emission factors, California Air Resources Board's (CARB) vehicle emission models, and studies commissioned by California agencies such as the California Energy Commission (CEC) and California Department of Resources Recycling and Recovery (CalRecycle)... When no customized information was provided, and no regional differences were defined for local air districts, statewide default values are utilized...For any project that substantially deviates from the types and features included in the surveys, site-specific data that are supported by substantial evidence should be used, if available...There are several opportunities for the user to change the defaults in the model; however, the user is required to provide justification for all changes made to the default settings (e.g., reference more appropriate data sources) in the Justification box before the user will be able to proceed to the next screen."* As there were no site-specific circumstances to justify any deviation from industry-accepted assumptions, the air quality analysis relied on the model's default assumptions for construction equipment inventory and use. The comment fails to demonstrate that the use of CalEEMod default assumptions was inappropriate here, it merely complains that such assumptions were used without demonstrating that such assumptions are inaccurate or improper for the Project.

- 3. Baseline HRA, Page 3, Comment:** “The second false statement included in the CE air quality analysis is...there is no supporting evidence provided to explain why emitting less than 1 pound per days of DPM would not result in substantial pollutant concentrations at nearby sensitive receptors.”

Response to Comment.

The commenter asserts that emitting less than one pound of DPM per day can lead to significant health risk impacts, but that conclusion is based solely on its own analysis that purports to demonstrate significant health impacts from DPM emissions regarding lifetime cancer rates.⁴ However, as noted above, the conclusion of the Baseline HRA of an approximately 49 in a million-cancer risk both fails to provide key information necessary to assess the efficacy of the analysis, and, where information on the assumptions is provided, the assumptions are improper and falsely engineered to drastically overstate health risks from short term exposures. As discussed further below, expert agency guidance does not require HRAs for residential construction projects because they are not considered a major source of harmful DPM emissions imposing public health risks. Pursuant to state guidance, cancer risks are lifetime risks assessed over a 30-year period. As addressed further below, state regulations and expert regulatory agency guidance from the California Office of Environmental Health Hazard Assessment (OEHHA) and South Coast Air Quality Management District (SCAQMD) do not require HRAs to assess lifetime cancer risk caused by diesel emissions from construction projects that last for a few months because the lifetime impacts of short-term exposures is highly variable and the results of such HRAs are inherently unreliable. There is no valid basis to assert that the limited duration diesel emissions from Project construction would result in significant health impacts for increasing cancer risk. The Baseline HRA cannot be relied upon to accurately demonstrate lifetime cancer risk for the Project and thus fails to undermine the valid qualitative cancer risk analysis in the CE, which is supported by substantial evidence and is consistent with regulatory guidance.

- 4. Baseline HRA, Pages 3-4, Comment:** The third false statement included in the CE air quality analysis is as follows: ... according to SCAQMD methodology, health risks from carcinogenic air toxics are usually described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 30-year period will contract cancer based on *the use of standard risk-assessment methodology. The entire duration of construction activities associated with implementation of the Project is anticipated to be approximately 27 months, and the magnitude of daily diesel PM emissions will vary over this time period*

Response to Comment.

The claim in the comment that OEHHA’s Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments (OEHHA Guidelines) require health risk assessments for construction projects lasting more than two months is false. The Appellant Letter misrepresents OEHHA Guidelines’ guidance for HRAs provided under AB 2588, the Air Toxic Hot Spots Program. The OEHHA Guidelines assess cancer risks over 30-year exposures, they do not mandate analysis for “short-term” projects even

⁴ California Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual, Risk Assessment Guidelines.

under the Toxic Hot Spots Program, but rather only for “facilities” as defined in Health and Safety Code Section 44322(a), which the state has determined applies to industrial facilities requiring operational air permits that use, manufacture, formulate, or release certain listed hazardous substances. Covered facilities do not include residential or mixed-use residential developments, which are not regulated under the Toxic Hot Spots Program. Thus, the OEHHA Guidelines guidance on this topic does not apply here, where the only DPM emissions would occur during a few months of construction activities as part of the construction of a residential Project.

As stated at pages 8-17 and 8-18 of the OEHHA Guidelines, the information regarding “short term” cancer exposures is provided to assist local air districts when they make permitting decisions for *facilities requiring air permits* related to shorter-term exposures. The OEHHA Guidelines do not state that construction projects lasting more than two months must be evaluated with HRAs. Indeed, the OEHHA Guidelines state that:

Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime. There are some studies indicating that dose rate changes the potency of a given dose of a carcinogenic chemical. In other words, a dose delivered over a short time period may have a different potency than the same dose delivered over a lifetime.⁵

Thus, the OEHHA Guidelines reflect the fact that the tools used to assess lifetime cancer risk – the very tool utilized in the Baseline HRA – is generally not appropriate for the assessment of short-term emission exposures, here an impact that is properly assessed to last 103 days based on the period of the greatest diesel emissions by the Project. Instead of asserting that HRAs built to assess lifetime cancer risk are appropriate for short term construction projects, where evaluating impacts from short term projects, the OEHHA Guidelines merely state that air district risk managers should ignore projects lasting less than two months, treat projects lasting between two and six months as lasting six months, and treat projects lasting more than six months as lasting for whatever the actual duration is.⁶ This discussion is, however, provided only as guidance for local air districts when issuing air permits to facilities with short term projects; it is not a statement that the risks associated with such projects are properly evaluated in an HRA or a validation of the improper methods utilized by Baseline in the Baseline HRA. The Project here does not require air permits for the operation of diesel equipment during construction, so the cited discussion in the OEHHA Guidelines regarding air permitting by regional air districts for short term projects at permitted facilities is not relevant and does not validate the invalid Baseline HRA. In addition, the Department of City Planning relies on methodologies established by the regional expert air quality agency SCAQMD for preparation of CEQA air quality analyses. SCAQMD published the CEQA Air Quality Handbook in November 1993 to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects proposed in the region.

The SCAQMD CEQA Handbook does not recommend analysis of toxic air contaminants (TACs) from short-term construction activities. Rather, as stated in the CE: “*SCAQMD recommends that health risk*

⁵ OEHHA Guidelines, at p. 8-17.

⁶ OEHHA Guidelines, at p. 8-18.

assessments be conducted for substantial sources of DPM (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units) and has provided guidance for analyzing mobile source diesel emissions.⁷ Based on this guidance, the Project would not include these types of land uses and is not considered to be a substantial source of DPM warranting a refined HRA since daily truck trips to the Project Site would not exceed 100 trucks per day or more than 40 trucks with operating transport refrigeration units.”

As indicated above, with respect to requiring quantitative HRAs related to DPM emissions from mobile sources, which describes the pollutant and type of source at issue, SCAQMD only requires HRAs to be prepared for substantial mobile sources of DPM emissions, including truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units. SCAQMD’s AB 2588 Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics Hot Spots Information and Assessment Act only applies to permitted industrial facilities and does not address so called “short term” projects.

SCAQMD Rule 1402, which implements the Toxic Hot Spots program in the region, only applies to facilities with one or more AQMD permits to operate, which the project is not required to obtain, and does not require analysis of short-term TAC or DPM emissions.

Thus, the comment’s assertion that a HRA is required for the Project is incorrect, as no agency has recognized infill residential development as a significant source of toxic air emissions requiring quantitative HRAs. As Project construction activities would vary throughout the site and would be short-term during only one brief portion of onsite construction activities, stationary source rules would not be appropriate for assessing impacts associated with DPM and an HRA is not required. The qualitative analysis relied on by the CE is appropriate to evidence the absence of a significant lifetime cancer risk imposed by the short duration of diesel emissions from the construction of the Project.

5. Lozeau Drury Letter, page 5, Comment #2: The Project will pose significant health risks from indoor air quality impacts, precluding reliance on the Infill Exemption.

Response to Comment

The comment letter includes the Offermann Report states that air quality analysis in the Class 32 CEQA exemption adopted for the Project (CE) is not adequate as it does not discuss, disclose, analyze, and mitigate the significant health risks in indoor air to future residents posed by formaldehyde, a toxic air contaminant. The comment asserts that residents of new residential buildings are exposed to high levels of off-gassed formaldehyde from certain construction materials made of composite wood. The comment also states that residents of the Project would be exposed to adverse levels of PM_{2.5} from ambient indoor air concentrations within the Project site. The Offermann Report provides the same generic analysis the Appellant has now submitted innumerable times to the City by an alleged expert asserting that a new housing project would result in significant impacts from construction materials that would allegedly release formaldehyde gas and cause significant indoor air quality impacts.

⁷ South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, 2002.

The comment alleges that its expert, Mr. Offermann, has determined that indoor emissions of formaldehyde will result in a significant health risk that requires mitigation, concluding that future residents will experience a cancer risk from formaldehyde of approximately 120 in one million. However, the Offermann Report *speculates* that the Project will be built using a specific amount of formaldehyde emitting composite wood construction materials, which are used in building products in lieu of lumber, such as decks, furniture, siding. As discussed further below, the assumptions are not based on the Project, itself, and are the exact same assumptions the Appellant has utilized for many different types of projects across the City in its numerous and serial appeals of new housing and development projects – indeed, the many virtually identical versions of the Offerman Report the Appellant has submitted all include the same assumptions about the use of composite wood materials regardless of the project and the product type, where not all projects use composite wood materials. Rather than relying on information about the Project, Mr. Offermann cites his own, 16-year-old, 2009 study—the California New Home Study (CNHS)—and calculates the lifetime cancer risk conclusion for the Project an even higher total 180 in one million figure based on this outdated 2009 study. In addition, Mr. Offermann bases his final impact conclusion on the updated CNHS, conducted in 2016-2018 (Singer et. Al., 2019), which found that the median indoor concentrations of formaldehyde in new homes built after 2009 with California Air Resources Board (CARB) Phase 2 Formaldehyde Airborne Toxic Control Measure (ATCM) materials had lower indoor formaldehyde concentrations, with a median indoor concentration of 22.4 $\mu\text{g}/\text{m}^3$ (18.2 ppb), as compared to a median of 36 $\mu\text{g}/\text{m}^3$ found in the 2007 CNHS, thus demonstrating the significant reductions achieved based on 2009 standards. The ATCM regulations are included as Exhibit A. However, while new homes built after the 2009 CARB formaldehyde ATCM have a 33% lower median indoor formaldehyde concentration and cancer risk, Mr. Offermann states that the median lifetime cancer risk is still allegedly 120 per million for homes built with CARB-compliant composite wood products.

The Offermann Report is substantively flawed and invalid, failing to address a CEQA impact in the first instance, failing to assess the Project, itself, and relying on speculation and unjustifiable assumptions that are plainly engineered to overstate health risks. First, the claim that the proposed Project would result in a significant human health impact to indoor air in a manner that impacts future residents does not address a valid CEQA impact, which does not regulate indoor air impacts and does not address alleged impacts to only future residents of residential projects.⁸ The air quality technical analysis performed for the Project in CAJA's July 2024 Categorical Exemption Report for the Project ("CE Report") is fully compliant with CEQA in its focus on regional and localized impacts from emissions of criteria pollutants and other relevant air quality concerns, including potential emissions of TACs related to outdoor air quality. This scope of analysis is appropriate in light of CEQA's general focus on projects' potential impacts on the human environment in general and not future project users.⁹ In furtherance of this scope and general focus of CEQA analyses, the State's CEQA Guidelines require CEQA-compliant air quality impacts analyses to assess the impacts a project would have on *outdoor* air quality, directing air quality analyses to address whether

⁸ See, e.g., See CEQA Guidelines, Appendix G, Air Quality; Parker Shattuck Neighbors v. Berkeley City Council (2013) 222 Cal.App.4th 768, 767 (It "is far from clear that adverse effects confined only to the people who build or reside in a project can ever suffice to render significant the effects of a physical change. In general, CEQA does not regulate environmental changes that do not affect the public at large." [citing Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 492 and Topanga Beach Renters Assn. v. Department of General Services (1976) 58 Cal.App.3d 188, 194].)

⁹ California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369, 377 ("In light of CEQA's text, statutory structure, and purpose, we conclude that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents.").

a project would conflict with or obstruct implementation of the applicable air quality plan, contribute to an existing air quality violation, or result in a cumulatively considerable increase in a criteria pollutant for which the region is in non-attainment, among other similar relevant factors.¹⁰ Indoor air quality is also not regulated by the applicable air quality plan, the SCAQMD's 2016 Air Quality Management Plan (AQMP). The USEPA, the California Air Resources Board (CARB) and SCAQMD have also not promulgated ambient air quality standards for indoor air quality.

The Offerman Report is also based on speculation and false assumptions that fail to produce a valid assessment of the Project's potential environmental impacts. First, the Offermann Report assumes the proposed Project would use formaldehyde containing materials during construction based on pure speculation and based on outdated information about the building materials generally available in the market. The Offermann Report states that the proposed Project will be exclusively built using CARB Phase 2 Formaldehyde ATCM materials. First, this is pure speculation; the Offerman Report cites no evidence in the record indicating the Project will use composite wood materials. Notably, the Project plans' materials data does not include the use of any composite wood materials in the construction of the Project.¹¹ Even so, as discussed further below, it bears noting that CARB has approved a class of no-added formaldehyde (NAF) and ultra-low-emitting formaldehyde (ULEF) resins that are available for use in construction of the proposed Project. Though the use of NAF or ULEF materials would not be required to address a valid CEQA impact to indoor air from formaldehyde gas emissions from construction materials, the Offermann Report nonetheless relies exclusively on speculation and unsupported assumptions based on the use of composite wood materials in the construction of the Project.

As indicated above, the Offermann Report's risk assessment also relies on irrelevant and outdated data that is not consistent with the Project and numerous other unreasonable assumptions that appear to be engineered to falsely inflate purported health risk levels from alleged formaldehyde emissions. First, the Offermann Report assumes the project would be similar to the results of a 2020 published study with data collected in 70 detached single-family houses built in 2011-2017, which were built in compliance with the mechanical ventilation requirements of California's building energy efficiency standards in existence at those times for that product type. The single-family homes relied on in the Offermann Report are, however, at least two generations of green building, energy code and Title 24 standards for ventilation and filtration removed from the current, 2023 standards currently applicable to the Project, which is not a single-family home project but a multi-family building over four stories in height with different and significantly more stringent filtration and ventilation standards as compared to single family homes built prior to 2017. Indeed, the next building code expected to be published in 2026 may apply depending on when the Project is permitted, which may have even more stringent standards. The study relied on by the Offermann Report thus does not analyze the Project or provide a valid basis for comparison with the Project. The 2023 multi-family building code standards that would apply to the Project are not at all analyzed by the Offermann Report, instead, it relies on outdated standards for a different product type with less stringent ventilation requirements and filtration requirements and, as a result, does not analyze the Project but rather single family houses built 8 to 15 years ago.

Another key improper assumption in the Offermann Report is that residents would be inside their homes for 24 hours per day, 52 weeks per year. This assumption is unrealistic as people do not stay in their homes

¹⁰ See CEQA Guidelines, Appendix G.

¹¹ See 638 S. Berendo St. Schematic Architectural Plans, Feb. 9, 2024, at pp. 3.01-3.05.

one hundred percent of the time and ignores the Fraction of time At Home (FAH) factor for residential receptors recommended by the California Office of Environmental Health Hazard Assessment (OEHHA) to account for residents traveling to work, school, or time otherwise outside of their homes daily or for extended periods for vacation and other trips. Therefore, as recommended by OEHHA, the appropriate FAH for residential receptors is 0.85, resulting in a 15-percent reduction in the speculative pollutant exposures assumed in the Offermann Report.¹² In addition, the Offermann Report ignores the application of the OEHHA- recommended Exposure Frequency (EF) for residential receptors. As recommended by OEHHA, the appropriate EF for residential receptors is 0.96, to represent 350 days per year of potential pollutant exposure to account for the assumption of a two-week period away from home each year, resulting in another calculated 4-percent reduction in pollutant exposure the Offermann Report fails to include in its analysis. Thus, the Offermann Report unjustifiably fails to rely on the reasonable assumptions regarding the amounts people tend to stay away from home that are reflected in expert agency guidance that it is industry standard to rely on, which in turn overstates the alleged health risks to indoor air.

Further, the Offermann Report assumes a daily air intake for individual model receptors of 20 cubic meters; however, this assumption is unsupported, and the report ignores the more detailed daily breathing rates normalized to body weight (L/kg body weight per day) that OEHHA recommends for health risk assessments.¹³ The Offermann Report also substantially overstates human formaldehyde ingestion; according to the American Lung Association, the average person inhales approximately 2,000 gallons, or roughly 7.57 cubic meters of air per day, less than half the 20 cubic meter inhalation assumed in the Offermann Report, yet another basis upon which the report drastically overstates exposures and, consequently, human health risks.¹⁴ The Offermann Report also improperly assumes that the daily exposure level of formaldehyde would be constant for a 70-year lifetime period. In so doing, it significantly overestimates the amount of potential formaldehyde emissions from the proposed Project in several regards. First, as indicated above, the Offermann Report unreasonably assumes constant exposures for 70 years, for 24 hours per day, every day to calculate residential formaldehyde exposure, thus vastly overestimating any potential formaldehyde exposure to residents who would occupy the proposed project who should not be assumed to stay in their homes 100 percent of the time. As stated, assumptions regarding time spent away from home promulgated by OEHHA are appropriate and reflect the industry standard for human health risk analyses. The Offermann Report also assumes that residents would live at the proposed Project for an entire 70-year lifespan. Estimations of how many times a person living in the United States moves in his or her lifetime have ranged from 9 times to 11 times, depending on age, race, and socioeconomic status, among other categories. Thus, it is unreasonable to assume that the residents who occupy the proposed Project would remain in the Project and be continuously exposed all day every day for a full 70 years.

Moreover, there are several variables that contribute to formaldehyde concentrations within residential dwellings including:

¹² California Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual, Risk Assessment Guidelines.

¹³ California Air Resources Board, Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. <https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable05012023.pdf>

¹⁴ American Lung Association, How Your Lungs Get the Job Done. <https://www.lung.org/blog/how-your-lungs-work>, last accessed July 8, 2024.

- The age of the building, since the release of formaldehyde decreases over time;
- Temperature and relative humidity;
- Air exchange rate; and
- The season.

The Offermann Report's assumptions about indoor formaldehyde concentrations for the proposed residences do not consider these factors and therefore cannot be considered reliable. For instance, the appeal states composite wood products that contain formaldehyde off-gas formaldehyde "over a very long period of time," but Mr. Offermann provides no reference to support this statement and misleadingly fails to specify the total duration of formaldehyde emissions, ultimately assuming emissions over the 70-year period analyzed. However, critically, the Agency for Toxic Substances and Disease Registry cites one study that shows that most formaldehyde is released from products within two years, after which emissions tail off substantially.¹⁵ Therefore, Mr. Offermann's assumption that the proposed Project's residents would be exposed to continuous high formaldehyde concentrations for an extended period of 70 years, is a gross overestimation and does not consider the fact that indoor formaldehyde levels in formaldehyde-containing construction materials decrease substantially after the first few years after construction. Moreover, Mr. Offermann does not include any information or analysis regarding temperature, humidity, seasonal conditions, or air exchange technology specific to the Project site, all of which he concedes are relevant to indoor formaldehyde concentrations but are nonetheless not taken into consideration in the analysis. Mr. Offermann's speculation, and self-servingly overstated assumptions do not provide valid evidence that the Project would result in significant human health risks from interior air quality impacts from formaldehyde. Indeed, the Offermann Report appears to stack various unreasonable and inaccurate assumptions with the explicit purpose of overstating alleged indoor air quality impacts from formaldehyde.

Moreover, as noted above, the Project would comply with applicable regulations that address formaldehyde in construction materials that are not addressed by Appellant or in the Offerman Report. The State of California addresses indoor air and formaldehyde emissions from construction materials through state law and regulations other than CEQA. These include the California Green Building Standards Code (CALGreen Code)¹⁶, applicable to new commercial and industrial buildings, which is designed to promote "environmentally responsible, cost-effective, healthier places to live and work." More specifically, Section 4.5, Environmental Quality, of the CALGreen Code provides mandatory residential measures to reduce the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and wellbeing of a building's installers, occupants and neighbors. It includes VOC limits for paints, coatings, adhesives, adhesive bonding primers, sealants, sealant primers, and caulk. Section 4.504.3, Carpet Systems, of the CALGreen Code establishes product requirements to meet one of the following: (1) Carpet and Rug Institute's Green Label Plus Program; (2) California Department of Public Health,

¹⁵ Agency for Toxic Substances and Disease Registry. Formaldehyde in Your Home: What you need to know (citing Park and Ikeda, Variations of formaldehyde and VOC levels during 3 years in new and older homes, Journal of Indoor Air, 2006.) Available at:

https://archive.cdc.gov/www_atcdr_cdc_gov/formaldehyde/home/index.html#:~:text=Most%20people%20don't%20have,formaldehyde%20exposure%20in%20their%20homes, last accessed January 25, 2025.

¹⁶ California Green Building Standard Code.

“Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,” Version 1.1; (3) NSF/ANSI 140 at the Gold Level; or (4) Scientific Certifications Systems Indoor Advantage Gold. Furthermore, Section 4.504.5, Composite Wood Products, of the CALGreen Code establishes limits for formaldehyde as specified in ARBS’s Air Toxics Control Measure for Composite Wood (e.g., particle board). These measures have been established through the CALGreen Code and reduce the quantity of air contaminants in indoor air to levels determined to be appropriate to protect human health by the state.

In addition, CARB’s ATCM (Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products) has a purpose of “reducing formaldehyde emissions from composite wood products, and finished goods that contain composite wood products, that are sold, offered for sale, supplied, used, or manufactured for sale in California. The composite wood products covered by this regulation are hardwood plywood, particleboard, and medium density fiberboard.”¹⁷ The control measure assures that all building materials and furnishings manufactured, distributed, imported and used in new construction in California meet the maximum allowable concentrations that assure healthful indoor air quality. CARB confirms that its Composite Wood Products (CWP) Regulation’s emission standards are set at low levels intended to protect public health.¹⁸ The CWP Regulation, first adopted in 2007, established two phases of emissions standards: an initial Phase I, and later, a more stringent Phase II that requires all finished goods, such as flooring, destined for sale or use in California to be made using complying composite wood products.

Moreover, as noted above, provisions were added to ATCM for manufacturers of hardwood plywood, particleboard, and medium density fiberboard who plan to use no-added formaldehyde (NAF) based resins or ultra-low-emitting formaldehyde (ULEF) resins.¹⁹ The U.S. EPA TSCA Title VI formaldehyde regulation includes a similar NAF/ULEF exemption provision and allows a manufacturer to be approved by CARB or a TPC recognized by U.S. EPA.²⁰ NAF-based resins are resins formulated with no added formaldehyde as part of the resin cross linking structure, and include resins made from soy, polyvinyl acetate, or methylene diisocyanate. ULEF resins are formaldehyde containing resins formulated such that the formaldehyde emissions from composite wood products are consistently below applicable Phase 2 emission standards. These products are becoming increasingly available in the state; as of July 2023,

¹⁷ See, Exhibit A; CARB, Composite Wood Products Airborne Toxic Control Measure: <https://ww2.arb.ca.gov/our-work/programs/composite-wood-products-program>, accessed January 24, 2025.

¹⁸ CARB, Frequently Asked Questions for Consumers, Reducing Formaldehyde Emissions from Composite Wood Products, https://ww3.arb.ca.gov/toxics/compwood/consumer_faq.pdf?_ga=2.32900281.682464648.157316981026610208.1565143819, accessed January 24, 2025.

¹⁹ Exhibit B (17 C.C.R., §§ 93120.3(c), 93120.3(d).)

²⁰ 40 C.F.R., §§ 770.7 (c)(4)(iii), 770.17, and 770.18.

California had approved nearly 600 NAF/ULEF manufacturers.²¹ The Offerman Report's assumption that such products would not be used in the Project is based on outdated data from a different housing product with less stringent indoor air requirements that is not relevant to the Project. The state, however, appropriately deals with the issue of indoor air quality and formaldehyde in construction materials with strict regulations that have become more stringent over time.

Lastly, the Offermann Report states that the project should install high-capacity air filters to reduce formaldehyde exposure. The 2023 California Building Standards Code (Title 24), Part 6 (California Building and Energy Efficiency Standards) as well as Part 11 (CALGreen) has standards for enhanced filtration for multi-family residential buildings to improve indoor air quality. As a result, high-efficiency air filters and mechanical ventilation are already required for the Project by current building code requirement that are not addressed by the Offerman Report.

²¹ See, CARB, Change in Approval Process for NAF/ULEF Manufacturers, Updated July 25, 2023, found at https://ww2.arb.ca.gov/sites/default/files/2023-07/Change%20in%20Approval%20Process%20for%20NAF-ULEF%20Manufacturers-updated_2.pdf, last accessed January 24, 2025.

EXHIBIT A

AIRBORNE TOXIC CONTROL MEASURE TO REDUCE FORMALDEHYDE EMISSIONS FROM COMPOSITE WOOD PRODUCTS

Final Regulation Order

AIRBORNE TOXIC CONTROL MEASURE TO REDUCE FORMALDEHYDE EMISSIONS FROM COMPOSITE WOOD PRODUCTS

All of the text shown below is new language to be added to the California Code of Regulations. Adopt new sections 93120-93120.12, title 17, California Code of Regulations, to read as follows:

§ 93120. *Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products.*

- (a) The Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products is contained in sections 93120 through 93120.12.
- (b) *Purpose.* The purpose of this airborne toxic control measure is to reduce formaldehyde emissions from composite wood products, and finished goods that contain composite wood products, that are sold, offered for sale, supplied, used, or manufactured for sale in California. The composite wood products covered by this regulation are hardwood plywood, particleboard, and medium density fiberboard.
- (c) *Applicability.* This airborne toxic control measure applies to:
 - (1) Manufacturers of hardwood plywood, particleboard, and medium density fiberboard that manufacture, sell, offer for sale, or supply these products for use in California;
 - (2) Distributors of hardwood plywood, particleboard, medium density fiberboard, and finished goods that contain composite wood products, that sell, offer for sale, or supply these products or goods for use in California;
 - (3) Importers of hardwood plywood, particleboard, and medium density fiberboard, and finished goods that contain composite wood products, that sell, offer for sale, or supply these products or goods for use in California;
 - (4) Fabricators that use hardwood plywood, particleboard, and medium density fiberboard to make other goods that are sold, offered for sale, or supplied for use in California;

- (5) Retailers of hardwood plywood, particleboard, medium density fiberboard, and finished goods that contain composite wood products, that sell, offer for sale, or supply these products or goods for use in California; and
- (6) Third party certifiers as defined in title 17, California Code of Regulations, section 93120.1.
- (d) This airborne toxic control measure does not apply to hardwood plywood, particleboard, medium density fiberboard, and finished goods that contain composite wood products that are manufactured, distributed, fabricated, imported, sold, offered for sale, or supplied for shipment and use outside of California.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, and 41712, Health and Safety Code.

§ 93120.1 *Definitions.*

- (a) For the purposes of this Airborne Toxic Control Measure, the following definitions shall apply:
 - (1) “ANSI” means the American National Standards Institute.
 - (2) “ARB” means the California Air Resources Board.
 - (3) “ASTM” means the American Society for Testing and Materials.
 - (4) “Batch” means the amount of composite wood product manufactured during a shift (8 or 12 hours, plus or minus one hour of production).
 - (5) “Combination core” means a platform for making hardwood plywood that consists of a combination of layers of veneer and particleboard or medium density fiberboard.
 - (6) “Component part” means a fabricated part that contains one or more composite wood products and is used in the assembly of finished goods.
 - (7) “Composite core” means a platform for making hardwood plywood or laminated products that consists of particleboard and/or medium density fiberboard, or combination core.

- (8) “Composite wood products” means hardwood plywood, particleboard, and medium density fiberboard. “Composite wood products” does not include hardboard, structural plywood as specified in the “Voluntary Product Standard - Structural Plywood” (PS 1-07), structural panels as specified in the “Voluntary Product Standard – Performance Standard for Wood-Based Structural-Use Panels” (PS 2-04), structural composite lumber as specified in “Standard Specification for Evaluation of Structural Composite Lumber Products” (ASTM D 5456-06), oriented strand board, glued laminated timber as specified in “Structural Glued Laminated Timber” (ANSI A190.1-2002), prefabricated wood I-joists as specified in “Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists” (ASTM D 5055-05), finger-jointed lumber, or “composite wood products” used inside of new vehicles as defined in section 430 of the California Vehicle Code (excluding recreational vehicles), rail cars, boats, aerospace craft, or aircraft.
- (9) “Distributor” means any person to whom a composite wood product or finished good is sold or supplied for the purposes of resale or distribution in commerce, except that manufacturers and retailers are not “distributors.”
- (10) “Door” means a finished good used to close off a room, closet, or entrance. A “door” moves on hinges, slides or rotates, and consists of a movable panel or combination of panels, and may include component parts.
- (11) “Executive Officer” means the “Executive Officer” of the California Air Resources Board, or his or her delegate.
- (12) “Fabricator” means any person that uses composite wood products to make finished goods. “Fabricator” includes producers of laminated products.
- (13) “Facility” means any site where composite wood products or finished goods are manufactured, tested, used, supplied or offered for sale, or sold in California. “Facility” includes, but is not limited to, manufacturing plants, testing laboratories, distribution centers, fabricator shops, warehouses, and retail stores.
- (14) “Fiber” means the slender threadlike elements of wood or similar cellulosic material, which can be separated by chemical and/or mechanical means, such as pulping, and can be formed into panels.
- (15) “Finished goods” means any good or product, other than a panel, containing hardwood plywood, particleboard, or medium density

fiberboard. Component parts are not “finished goods,” although they are used in the assembly of finished goods. “Finished goods” do not include used goods such as antiques or second-hand furniture. For the purposes of this subsection, a “used good” means a “finished good” that has previously been sold or supplied to the ultimate purchaser. “Ultimate purchaser” means the first person who in good faith purchases or acquires a “finished good” for purposes other than resale.

- (16) “Formaldehyde” means a colorless gas at room temperature that at elevated concentrations has a strong, pungent odor and can be irritating to the eyes, nose, and lungs (i.e., CAS No. 50-00-0).
- (17) “Hardboard” means a composite panel composed of cellulosic fibers, made by dry or wet forming and hot pressing of a fiber mat with or without resins, that complies with one of the following ANSI standards: “Basic Hardboard” (ANSI A135.4-2004), “Prefinished Hardboard Paneling” (ANSI A135.5-2004), or “Hardboard Siding” (ANSI A135.6-2006).
- (18) “Hardwood” means the wood of a deciduous broad-leafed tree. Examples of “hardwoods” include, but are not limited to, aspen, birch, and oak.
- (19) “Hardwood plywood” (HWPW) means a panel composed of an assembly of (A) hardwood layers or plies of veneer or (B) veneers in combination with a platform consisting of lumber core, composite core, a special core material, or special back material, joined with an adhesive. The face veneer may be composed of a hardwood or decorative softwood species (ANSI/HPVA HP-1-2004). “Hardwood plywood” includes wall paneling, industrial panels, and “hardwood plywood” panels used in making flooring. “Hardwood plywood” does not include laminated products, military specified plywood, or curved plywood.
- (20) “Hardwood plywood – composite core” (HWPW-CC) means hardwood plywood with a composite core.
- (21) “Hardwood plywood – veneer core” (HWPW-VC) means hardwood plywood with a core made of a sheet or sheets of veneer.
- (22) “HPVA” means the Hardwood Plywood and Veneer Association.
- (23) “Importer” means the person or entity as defined in the regulations of the Bureau of Customs and Border Protection, 19 Code of Federal Regulations, section 101.1.

- (24) "Laminate" means a veneer or other material affixed as a decorative surface to a platform.
- (25) "Laminated product" means a finished good or component part of a finished good made by a fabricator in which a laminate or laminates are affixed to a platform. If the platform consists of a composite wood product, the platform must comply with the applicable emission standards.
- (26) "Lot" means the volume of a product type produced either: (A) from the beginning of a production run until the first quality control test; or (B) between one quality control test and the next one; or (C) from the last quality control test to the end of a production run.
- (27) "Manufacturer" means any person who manufactures or produces a composite wood product.
- (28) "Medium density fiberboard" (MDF) means a panel composed of cellulosic fibers (usually wood) made by dry forming and pressing of a resinated fiber mat (ANSI A208.2-2002).
- (29) "No-added formaldehyde based resins" means resins formulated with no added formaldehyde as part of the resin cross linking structure for making hardwood plywood, particleboard, or medium density fiberboard. "No-added formaldehyde based resins" include, but are not limited to, resins made from soy, polyvinyl acetate, or methylene diisocyanate.
- (30) "Panel" means any particleboard, medium density fiberboard, or hardwood plywood board produced for sale, supply, or distribution by a composite wood product manufacturer.
- (31) "Particle" means a distinct fraction of wood or other cellulosic material produced mechanically and used along with resin to make particleboard. "Particles" are larger in size than fibers.
- (32) "Particleboard" means a panel composed of cellulosic material (usually wood) in the form of discrete particles (as distinguished from fibers, flakes, or strands) that are pressed together with resin (ANSI A208.1-1999).
- (33) "Person" shall have the same meaning as defined in Health and Safety Code section 39047.

- (34) "Platform" means the veneer core, composite core, combination core, lumber core, or special core material used in the manufacture of hardwood plywood or laminated products.
- (35) "Plywood" means a panel product consisting of layers of wood veneers in combination with a platform, pressed together with resin. "Plywood" includes panel products made by either hot or cold pressing (with resin) veneers to a platform.
- (36) "Product type" means a type of composite wood product that differs from another based on composition, thickness, number of plies (if hardwood plywood), and resin to distinguish one composite wood product from another made by the same manufacturer.
- (37) "Recreational vehicle" has the same meaning as defined in section 18010 of the California Health and Safety Code.
- (38) "Retailer" means any person or entity that sells, offers for sale, or supplies directly to consumers composite wood products or finished goods that contain composite wood products.
- (39) "Softwood" means wood produced from needle and/or cone bearing trees (ANSI/HPVA HP-1-2004).
- (40) "Thin MDF" means medium density fiberboard that has a maximum thickness of eight millimeters.
- (41) "Third party certifier" means an organization or entity approved by the Executive Officer that: (A) verifies the accuracy of the emission test procedures and facilities used by manufacturers to conduct formaldehyde emission tests, (B) monitors manufacturer quality assurance programs, and (C) provides independent audits and inspections.
- (42) "Ultra-low-emitting formaldehyde (ULEF) resins" means resins formulated such that average formaldehyde emissions are consistently below the Phase 2 emission standards in section 93120.2, as provided in section 93120.3(d).
- (43) "Veneer" means thin sheets of wood peeled or sliced from logs for use in the manufacture of wood products such as plywood, laminated veneer lumber, laminated products, or other products.
- (44) "Veneer core" means a core material for making plywood that consists of veneer.

- (45) “Window” means a finished good consisting of a frame in which are set panes of glass, for the admission of air or light, or both, into an opening in the wall of a building. The frame includes jambs, stiles, sashes, and rails, and excludes sills, window headers and window seats.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, and 41712, Health and Safety Code.

§ 93120.2 *Formaldehyde Emission Standards for Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF).*

- (a) *Emission Standards.* The formaldehyde emission standards in Table 1 apply to hardwood plywood (HWPW), particleboard (PB), and medium density fiberboard (MDF) sold, supplied, offered for sale, or manufactured for sale in California.

Except as provided in section 93120.2(b), Exemptions, and the “sell-through” provisions of section 93120.12, Appendix 1, no person shall sell, supply, offer for sale, or manufacture for sale in California any composite wood product which, at the time of sale or manufacture, does not comply with the emission standards in Table 1 on or after the effective dates specified in Table 1.

Table 1					
Phase 1 and Phase 2 Formaldehyde Emission Standards for Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF) ¹					
Effective Date	---- Phase 1 (P1) and Phase 2 (P2) Emission Standards (ppm) ----				
	HWPW-VC	HWPW-CC	PB	MDF	Thin MDF
1-1-2009	P1: 0.08	-----	P1: 0.18	P1: 0.21	P1: 0.21
7-1-2009	-----	P1: 0.08	-----	-----	
1-1-2010	P2: 0.05	-----	-----	-----	-----
1-1-2011	-----	-----	P2: 0.09	P2: 0.11	-----
1-1-2012	-----	-----	-----	-----	P2: 0.13
7-1-2012	-----	P2: 0.05	-----	-----	
⁽¹⁾ Based on the primary test method [ASTM E 1333-96(2002)] in parts per million (ppm). HWPW-VC = veneer core; HWPW-CC = composite core.					

A product “does not comply with the emission standards in Table 1” if:

- (1) The composite wood product was produced by a manufacturer without either: (A) a current third party certification program that complies with section 93120.3(b), (B) a current ARB approval to use no-added formaldehyde based resins as provided in section 93120.3(c), or (C) a current ARB approval to use a ULEF resin as provided in section 93120.3(d); or
 - (2) Records of testing conducted by the manufacturer or the third party certifier show that a particular composite wood product sold, supplied, or offered for sale in California exceeded the applicable emission standard specified in Table 1, based on: (A) the compliance testing procedure for hardwood plywood, particleboard, and medium density fiberboard specified in section 93120.9(a) or (B) the quality control testing method specified in 93120.9(d) (subject to permitted retesting, disposition or treatment); or
 - (3) A composite wood product produced by a manufacturer is tested at any time after it is manufactured, using either the compliance test method specified in section 93120.9(a) or the enforcement test method specified in section 93120.9(b), and is found to exceed the applicable emission standard specified in Table 1; or
 - (4) A finished good contains any composite wood product which does not comply with the emission standards in Table 1, based on the criteria set forth in paragraphs (1), (2), or (3) above; or
 - (5) A finished good is found to contain any composite wood product that does not comply with the applicable emission standards in Table 1 using the enforcement test method for finished goods specified in section 93120.9(c).
- (b) *Exemptions.*
- (1) The emission standards in section 93120.2(a) do not apply to composite wood products or finished goods containing these materials that are manufactured, sold, offered for sale, or supplied for shipment and use outside of California.
 - (2) The emission standards in section 93120.2(a) do not apply to hardwood plywood and particleboard materials manufactured, sold, supplied for installation, or installed in manufactured homes subject to the United States Department of Housing and Urban Development regulations (24 Code of Federal Regulations, section 3280.308).

- (3) To qualify for an exemption specified in section 93120.2(b)(1) or 93120.2(b)(2), the person claiming the exemption must maintain adequate documentation to demonstrate that the criteria of the exemption are met.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.3 *Requirements for Manufacturers of Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF).*

- (a) *Emission Standards.* All manufacturers of HWPW, PB, and MDF must comply with the requirements of section 93120.2(a). Except as provided in the “sell-through” provisions in Appendix 1 of section 93120.12, all HWPW, PB, and MDF sold, supplied, or offered for sale on or after the effective dates specified in section 93120.2(a) must comply with the emission standards specified in section 93120.2(a).
- (b) *Third Party Certification.* For manufacturers of HWPW, PB, and MDF using resins that contain formaldehyde, compliance with the emission standards specified in section 93120.2(a) must be verified by using a third party certifier approved by ARB under section 93120.4. These manufacturers must also comply with the quality assurance requirements specified in Appendix 2 of section 93120.12.
- (c) *Special Provisions for Manufacturers of HWPW, PB, and MDF with No-Added Formaldehyde Based Resins.*
 - (1) Upon written approval of the Executive Officer, manufacturers of HWPW, PB, and MDF who plan to use no-added formaldehyde based resins are not required to comply with section 93120.3(b). To apply for ARB approval, manufacturers must submit the following information to the Executive Officer: (A) a statement indicating which product types will be manufactured using no-added formaldehyde based resins for sale in California; (B) the chemical formulation of the candidate no-added formaldehyde based resins, including base resins, catalysts, and other additives as used in manufacturing; (C) the name of the ARB approved third party certifier; and (D) data on the emissions performance of the candidate no-added formaldehyde based resins. These data must be obtained by working with an ARB approved third party certifier and must include three months of routine quality control testing data, the correlation of the routine quality control testing data to primary or secondary method testing data, and the results of one

primary or secondary method test, as required in Appendix 2 of section 93120.12. Ninety percent of the three months of routine quality control testing data and the results of the one primary or secondary method test must be shown to be no higher than 0.04 ppm. In addition, all data must be shown to be no higher than 0.05 ppm for HWPW and 0.06 ppm for PB, MDF, and thin MDF.

- (2) Within 45 days after receiving an application from a manufacturer, the Executive Officer shall inform the applicant, in writing, either that the application is complete and accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
- (3) Within 30 days of receiving additional information provided in response to a determination by the Executive Officer that an application is deficient, the Executive Officer shall inform the applicant, in writing, either that the new information is sufficient to make the application complete and that the application is accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
- (4) Within 90 days after an application has been deemed complete, the Executive Officer shall act to approve or disapprove the application. The Executive Officer shall issue an Executive Order approving the application if the evidence submitted by the applicant is sufficient to demonstrate that the applicant has met the requirements of section 93120.3(c)(1). The approval shall have a duration of two years, and the manufacturer may apply for re-approval as provided in this section. An application for re-approval must include results of at least one primary or secondary method test for each product type based on a panel or set of panels randomly selected and tested by an ARB approved third party certifier, and the chemical formulation of the no-added formaldehyde based resins.
- (5) The Executive Officer may, in the course of processing the application, request the applicant to clarify, amplify, correct, or otherwise supplement the information required for the application. The applicant and the Executive Officer may mutually agree to longer time periods for determining whether an application is complete, or for approving or disapproving an application.
- (6) If the manufacturer decides to change to formaldehyde based resins, ARB must be notified in advance and the manufacturer must comply with the requirements of section 93120.3(b) for that product type.

- (d) *Special Provisions for Manufacturers of HWPW, PB and MDF with Ultra-Low-Emitting Formaldehyde (ULEF) Resins.*
- (1) Upon written approval of the Executive Officer, manufacturers of HWPW, PB, and MDF who plan to use ultra-low-emitting formaldehyde (ULEF) resins may test their products less frequently than otherwise required. The testing frequency for manufacturers using ULEF resins is specified in Appendix 2 of section 93120.12. To apply for ARB approval, manufacturers must submit the following information to the Executive Officer: (A) a statement indicating which product types will be manufactured with ULEF resins for sale in California; (B) the chemical formulation of the candidate ULEF resins, including base resins, scavenger resins, scavenger additives, catalysts, and other additives as used in manufacturing; (C) the name of the ARB approved third party certifier; and (D) data on the emissions performance of the candidate ULEF resins to demonstrate that panels manufactured with these resins can consistently achieve the following: (1.) for HWPW, the Phase 2 emission standards specified in section 93120.2(a); or (2.) for PB and MDF, the emission values in Table 2. These data must be obtained by working with an ARB approved third party certifier and must include six months of routine quality control testing data, the correlation of the routine quality control testing data to primary or secondary method testing data, and the results of two quarterly primary or secondary method tests, as required by Appendix 2 of section 93120.12. For HWPW, in order to qualify for approval to test any product type less frequently, the results of the six months of routine quality control testing data and the two quarterly primary or secondary method tests must all be shown to be no higher than the Phase 2 emission standards. For PB and MDF, in order to qualify for approval to test any product type less frequently, ninety percent of the six months of routine quality control testing data and the results of the two quarterly primary or secondary method tests must be shown to be no higher than the ULEF-target value listed in Table 2, and all data must be shown to be no higher than the ULEF-cap value listed in Table 2.

<p style="text-align: center;">Table 2 Ultra-Low-Emitting Formaldehyde (ULEF) Resin Emission Target and Cap Values (in ppm) for Particleboard (PB) and Medium Density Fiberboard (MDF)¹</p>			
	PB	MDF	Thin MDF
ULEF-target	0.05	0.06	0.08
ULEF-cap	0.08	0.09	0.11
<p>⁽¹⁾ Concentrations must be based on correlations with the primary or secondary test method in parts per million (ppm).</p>			

- (2) Upon written approval of the Executive Officer, manufacturers of HWPW, PB, MDF, and thin MDF may qualify their product types for an exemption from third party certification. To qualify for an exemption from third party certification for a product type, ninety percent of six months of routine quality control testing data and the results of two quarterly primary or secondary method tests must be shown to be no higher than a ULEF-target value of 0.04 ppm. All data must be shown to be no higher than a ULEF-cap value of 0.05 ppm for HWPW and 0.06 ppm for PB, MDF, and thin MDF. All other requirements of section 93120.3(d)(1) apply. Manufacturers who have been exempted from third party certification do not need to comply with the requirements of Appendix 2 of section 93120.12.
- (3) Within 45 days after receiving an application from a manufacturer, the Executive Officer shall inform the applicant, in writing, either that the application is complete and accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
- (4) Within 30 days of receiving additional information provided in response to a determination by the Executive Officer that an application is deficient, the Executive Officer shall inform the applicant, in writing, either that the new information is sufficient to make the application complete and that the application is accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
- (5) Within 90 days after an application has been deemed complete, the Executive Officer shall act to approve or disapprove the application. The Executive Officer shall issue an Executive Order approving the application if the evidence submitted by the applicant is sufficient to demonstrate that the applicant has met the requirements specified in section 93120.3(d)(1) or (d)(2). The approval shall have a duration of

two years, and the manufacturer may apply for re-approval as provided in this section. An application for re-approval must include the results of at least two primary or secondary method tests for each product type based on panels randomly selected and tested by an ARB approved third party certifier, and the chemical formulation of the ULEF resins.

- (6) The Executive Officer may, in the course of processing the application, request the applicant to clarify, amplify, correct, or otherwise supplement the information required for the application. The applicant and the Executive Officer may mutually agree to longer time periods for determining whether an application is complete, or for approving or disapproving an application.
- (7) If the manufacturer decides to change resin systems, ARB must be notified in advance and the manufacturer must comply with the requirements of section 93120.3(b) for that product type.
- (e) *Product Labeling Requirements.* Each panel or bundle of composite wood products must be clearly labeled to indicate compliance with the emission standards specified in section 93120.2(a). The label shall include, at a minimum, all of the following information:
 - (1) Manufacturer name;
 - (2) Product lot number or batch produced;
 - (3) A marking to denote that the composite wood product complies with the applicable Phase 1 or 2 emission standards specified in section 93120.2(a) or was made using ULEF resins or no-added formaldehyde based resins; and
 - (4) The ARB assigned number of the approved third party certifier. This requirement does not apply to manufacturers using no-added formaldehyde based resins that have obtained ARB approval as provided in section 93120.3(c) or products manufactured using ULEF resins as provided in section 93120.3(d)(2).
- (f) *Statement of compliance.* For each composite wood product, the manufacturer must include on the bill of lading or invoice: (1) the ARB assigned number of the approved third party certifier, if applicable; and (2) a statement that the composite wood products comply with the applicable Phase 1 or Phase 2 emission standard specified in section 93120.2(a) and, if applicable, were made using ULEF resins or no-added formaldehyde based resins.

- (g) *Recordkeeping Requirements for Manufacturers of Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF).*
- (1) Beginning January 1, 2009 for manufacturers of HWPW-VC, PB, MDF, and thin MDF and July 1, 2009 for manufacturers of HWPW-CC, manufacturers must keep records of their quality assurance emissions test data for each product as provided in Appendix 2 of section 93120.12. Manufacturers using no-added formaldehyde based resins that have obtained ARB approval under section 93120.3(c) must keep documentation to demonstrate ARB approval to use no-added formaldehyde based resins. Manufacturers that have obtained ARB approval under section 93120.3(d) to use ULEF resins must keep documentation to demonstrate that ARB approval has been obtained. Records must be kept in either electronic or hard copy form for a period of two years.
- (2) For every composite wood product produced for sale in California, manufacturers must maintain records at their production facilities for a period of two years, including:
- (A) Tracking information to allow each composite wood product produced to be traced to a specific lot number or batch produced;
 - (B) Product information (including description of the composite wood product, date of manufacture, and lot/batch number);
 - (C) Purchaser information (including purchaser's name, contact person, address, phone number, purchase order or invoice number, and amount purchased), if applicable;
 - (D) Product transporter information (including delivery company name, contact person, address, phone number, and shipping invoice number), if applicable;
 - (E) Identification of the ARB approved third party certifier (including company name, contact person, phone number, mailing and email address); this subsection (E) does not apply to products manufactured with no-added formaldehyde based resins as specified under section 93120.3(c)(1) or products manufactured with ULEF resins as specified under section 93120.3(d)(2); and
 - (F) Manufacturers of HWPW, PB, and MDF using no-added formaldehyde based resins or ULEF resins must maintain records on an ongoing basis for each composite wood product produced, including:

1. The ARB approval letter as specified in section 93120.3(c) or (d);
 2. Amount of resin use reported by volume and weight;
 3. Production volume reported as square feet per product type;
 4. Resin trade name, resin manufacturer contact information, and resin supplier contact information;
 5. Changes in press time by more than 20 percent for any product type; and
 6. Changes in the formulation of the no-added formaldehyde based resins or ULEF resins.
- (3) Records must be kept on the disposition of non-complying lots or batches of composite wood products. These records shall include: product type and amount of composite wood products affected, lot or batch numbers, measures taken to mitigate the non-complying composite wood products, results of retesting, and final disposition of the lots or batches of composite wood products.
- (4) All records required by this section shall be made available to ARB or local air district personnel upon request.
- (h) *Facility inspections.* Each manufacturing plant may be inspected by third party certifiers as provided in Appendices 2 and 3 of section 93120.12. In addition, manufacturers may also be inspected by ARB or local air district personnel. In the course of an inspection, ARB or local air district personnel may request to audit records or secure samples for testing. Composite wood products secured during an inspection are subject to testing using the enforcement test method specified in section 93120.9(b), to determine compliance with the applicable emission standards.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.4 *Third Party Certifiers.*

- (a) All third party certifiers must be approved in writing by the ARB Executive Officer as provided in subsection (b). The Executive Officer will issue a number to each approved third party certifier.

- (b) *ARB Approval of Third Party Certifiers.*
- (1) Applications to become an ARB-approved third party certifier must be submitted in writing to the Executive Officer and must contain the following:
 - (A) Evidence of actual field experience in the verification of laboratories and wood products, to demonstrate how applicants will be able to competently perform the requirements of Appendix 3;
 - (B) Evidence of the ability to properly train and supervise inspectors;
 - (C) Evidence of a current “product certification agency” accreditation issued by a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC, 2000); and
 - (D) List of the composite wood products that the applicant is applying to verify and evidence that the applicant is qualified to verify these products.
 - (2) Within 45 days of receiving an application to become an ARB-approved third party certifier, the Executive Officer shall inform the applicant, in writing, either that the application is complete and accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
 - (3) Within 30 days of receiving additional information provided in response to a determination by the Executive Officer that an application is deficient, the Executive Officer shall inform the applicant, in writing, either that the new information is sufficient to make the application complete and that the application is accepted for filing, or that the application is deficient and shall identify the specific information required to make the application complete.
 - (4) Within 90 days after an application has been deemed complete, the Executive Officer shall act to approve or disapprove the application. The Executive Officer shall issue an Executive Order approving the application if the evidence submitted by the applicant is sufficient to demonstrate that the applicant can competently perform the tasks described in subsection (c). The Executive Order shall have a duration of two years. Within 120 days of the expiration date of the Executive Order, a third party certifier may apply for re-approval by submitting an updated application to the Executive Officer to demonstrate the continued ability to comply with section 93120.4(b)(1).

- (5) The Executive Officer may, in the course of processing the application, request the applicant to clarify, amplify, correct, or otherwise supplement the information required for the application. The applicant and the Executive Officer may mutually agree to longer time periods for determining whether an application is complete, or for approving or disapproving an application.
- (c) *Requirements for Third Party Certifiers.* Requirements for ARB approved third party certifiers are contained in section 93120.12, Appendix 3.
- (d) *Modification or Revocation of an Executive Order Approving a Third Party Certifier.* The Executive Officer may review and, for good cause, modify or revoke an Executive Order approving a third party certifier. The Executive Officer shall not modify or revoke an Executive Order without affording the third party certifier the opportunity for a hearing in accordance with the procedures specified in Article 2 (commencing with section 60055.1) of Subchapter 1.25 of Chapter 1 of Division 3 of Title 17, California Code of Regulations.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, and 41712, Health and Safety Code.

§ 93120.5 *Requirements for Distributors of Hardwood Plywood (HWPW), Particleboard (PB), Medium Density Fiberboard (MDF), and Finished Goods Containing Those Materials.*

- (a) *Emission Standards.* Except as provided in the “sell-through” provisions of section 93120.12, Appendix 1, all distributors must comply with the requirements of section 93120.2(a) for all composite wood products and finished goods containing these materials that are sold, supplied, offered for sale, or purchased for sale in California.
- (b) *Additional Requirements to Help Ensure that Complying Composite Wood Products and Finished Goods are Purchased.* Distributors must take reasonable prudent precautions to ensure that the composite wood products and composite wood products contained in finished goods that they purchase comply with the emission standards specified in section 93120.2(a). “Reasonable prudent precautions” include, at a minimum, instructing each supplier that the composite wood products and finished goods they supply to a distributor must comply with the applicable emission standards, and obtaining written documentation from each supplier that this is so.

In addition, distributors must keep records showing the date of purchase and the supplier of the composite wood products and finished goods, and document the precautions taken to ensure that the composite wood products and composite wood products contained in finished goods comply with applicable emission standards. These records must be kept in electronic or hard copy form for a minimum of two years and provided to ARB or local air district personnel upon request. This section does not affect the liability of any person for any violation of section 93120.2(a).

- (c) *Product Labeling Requirements for Composite Wood Products and Finished Goods.*
 - (1) *Composite Wood Products.* If the composite wood products procured by a distributor are not modified by the distributor, no additional labeling is required. If the composite wood products are modified, distributors are subject to the labeling requirements specified for fabricators in section 93120.7(d).
 - (2) *Finished goods containing HWPW, PB, or MDF.* If the finished goods purchased by a distributor are not modified by the distributor, no additional labeling is required. If the finished goods are modified, the distributor must label the modified goods as specified for fabricators in section 93120.7(d).
- (d) *Statement of compliance.* For each composite wood product or finished good made with these materials, the distributor must state on the bill of lading or invoice, that the composite wood products or composite wood products contained in finished goods comply with the applicable Phase 1 or Phase 2 emission standard specified in section 93120.2(a).
- (e) *Facility inspections.* Distributors may be inspected by ARB or local air district personnel. In the course of an inspection, ARB or local air district personnel may request to audit records or secure samples for testing. Composite wood products or finished goods secured during an inspection are subject to testing, using the applicable enforcement test method specified in section 93120.9, to determine compliance with the applicable emission standards.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.6 *Requirements for Importers of Hardwood Plywood (HWPW), Particleboard (PB), Medium Density Fiberboard (MDF), and Finished Goods Containing Those Materials.*

- (a) *Emission Standards.* Except as provided in the “sell-through” provisions of section 93120.12, Appendix 1, all importers must comply with the requirements of section 93120.2(a) for all composite wood products and finished goods containing these materials that are sold, supplied, offered for sale, or purchased for sale in California.
- (b) *Additional Requirements to Help Ensure that Complying Composite Wood Products and Finished Goods are Purchased.* Importers must take reasonable prudent precautions to ensure that the composite wood products and composite wood products contained in finished goods that they purchase comply with the emission standards specified in section 93120.2(a). “Reasonable prudent precautions” include, at a minimum, instructing each supplier that the goods they supply to an importer must comply with the applicable emission standards, and obtaining written documentation from each supplier that this is so.

In addition, importers must keep records showing the date of purchase and the supplier of the composite wood products and finished goods, and document the precautions taken to ensure that the composite wood products and composite wood products contained in finished goods comply with applicable emission standards. These records must be kept in electronic or hard copy form for a minimum of two years and provided to ARB or local air district personnel upon request. This section does not affect the liability of any person for any violation of section 93120.2(a).

- (c) *Product Labeling Requirements for Composite Wood Products and Finished Goods.*
 - (1) *Composite Wood Products.* If the composite wood products procured by an importer are not modified by the importer, no additional labeling is required. If the composite wood products are modified, importers are subject to the labeling requirements specified for fabricators in section 93120.7(d).
 - (2) *Finished goods containing HWPW, PB, or MDF.* If the finished goods purchased by an importer are not modified by the importer, no additional labeling is required. If the finished goods are modified, the importer must label the modified goods as specified for fabricators in section 93120.7(d).

- (d) *Statement of compliance.* For each composite wood product or finished good made with these materials, the importer must state on the bill of lading or invoice, that the composite wood products or composite wood products contained in finished goods comply with the applicable Phase 1 or Phase 2 emission standard specified in section 93120.2(a).
- (e) *Facility inspections.* Importers may be inspected by ARB or local air district personnel. In the course of an inspection, ARB or local air district personnel may request to audit records or secure samples for testing. Composite wood products or finished goods secured during an inspection are subject to testing, using the applicable enforcement test method specified in section 93120.9, to determine compliance with the applicable emission standards.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.7 *Requirements for Fabricators that use Hardwood Plywood (HWPW), Particleboard (PB), Medium Density Fiberboard (MDF), and Finished Goods Containing Those Materials.*

- (a) *Emission Standards.*
 - (1) Except as provided in the “sell-through” provisions of section 93120.12, Appendix 1, all fabricators must comply with the requirements of section 93120.2(a) for all composite wood products and finished goods containing these materials that are sold, supplied, offered for sale, or purchased for sale in California.
 - (2) Fabricators that produce laminated products, and do not manufacture composite wood products, do not need to comply with the manufacturer requirements regarding third party certification in section 93120.3(b).
 - (3) If the platform used by a fabricator to produce a laminated product consists of a composite wood product, the platform must comply with the applicable emission standards specified in section 93120.2(a).
 - (4) Fabricators manufacturing composite wood products exclusively for use by the fabricator in making finished goods must comply with all requirements of section 93120.3, except the product labeling requirements contained in section 93120.3(e).

(b) *Exemptions.*

- (1) Windows that contain composite wood products are exempt from the requirements of this section if the window product contains less than five percent by volume of HWPW, PB, or MDF combined in relation to the total volume of the finished window product.
- (2) Exterior doors and garage doors that contain composite wood products are exempt from the requirements of this section if either: (A) the doors are made from composite wood products manufactured with no-added formaldehyde based resins or ULEF resins; or (B) the doors contain less than three percent by volume of HWPW, PB, or MDF combined in relation to the total volume of the finished exterior door or garage door.
- (3) Local government agencies and school districts do not need to comply with recordkeeping or product labeling requirements of section 93120.7 unless finished goods are being sold, offered for sale, or manufactured for sale in California.

(c) *Additional Requirements to Help Ensure that Complying Composite Wood Products and Finished Goods are Purchased.* Fabricators must take reasonable prudent precautions to ensure that the composite wood products and composite wood products contained in finished goods that they purchase are in compliance with the applicable emission standards specified in section 93120.2(a), and are labeled as complying with the applicable Phase 1 or Phase 2 standards in section 93120.2(a). "Reasonable prudent precautions" include, at a minimum, instructing each supplier that the goods they supply to the fabricator must comply with the applicable emission standards, and obtaining written documentation from each supplier that this is so.

In addition, fabricators must keep records showing the date of purchase and the supplier of the composite wood products and finished goods, and document the precautions taken to ensure that the composite wood products and composite wood products contained in finished goods comply with applicable emission standards. These records must be kept in electronic or hard copy form for a minimum of two years and provided to ARB or local air district personnel upon request. This section does not affect the liability of any person for any violation of section 93120.2(a).

(d) *Product Labeling Requirements.* Fabricators must:

- (1) Label their finished goods containing HWPW, PB, or MDF destined for sale or supply in California. The label shall be applied as a stamp, tag, sticker, or bar code on every finished good produced, or on every box containing finished goods. The label shall include, at a minimum, the fabricator's name, the date the finished good was produced and a marking to denote that the product was made with HWPW, PB, or MDF that complies with the applicable Phase 1 or Phase 2 emission standards in section 93120.2(a). Finished goods shall be labeled as having been made with no-added formaldehyde based resins or ULEF resins if this is so for all HWPW, PB, or MDF used in fabricating the finished goods.
- (2) Designate their goods as being made with HWPW, PB, or MDF that complies with the applicable emission standards specified in section 93120.2(a) on the bill of lading or invoice provided to distributors, importers, other fabricators, or retailers.
- (e) *Facility inspections.* Fabricators are subject to periodic inspection by ARB or local air district personnel. In the course of an inspection, ARB or local air district personnel may request to audit records or secure samples for testing. Composite wood products or finished goods secured during an inspection are subject to testing, using the applicable enforcement test method specified in section 93120.9, to determine compliance with the applicable emission standards.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.8 *Requirements for Retailers that Sell, Supply, or Offer for Sale Hardwood Plywood (HWPW), Particleboard (PB), Medium Density Fiberboard (MDF), and Finished Goods Containing Those Materials.*

- (a) *Emission Standards.* Except as provided in the “sell-through” provisions of section 93120.12, Appendix 1, all retailers must comply with the requirements of section 93120.2(a) for all composite wood products and finished goods containing these materials that are sold, supplied, offered for sale, or purchased for sale in California.
- (b) *Additional Requirements to Help Ensure that Complying Composite Wood Products and Finished Goods are Purchased.* Retailers must take reasonable prudent precautions to ensure that the composite wood products and composite wood products contained in finished goods that they purchase comply with the emission standards

specified in section 93120.2(a). "Reasonable prudent precautions" include, at a minimum, instructing each supplier that the goods they supply to the retailer must comply with the applicable emission standards, and obtaining written documentation from each supplier that this is so.

In addition, retailers must keep records showing the date of purchase and the supplier of the composite wood products and finished goods, and document the precautions taken to ensure that the composite wood products and composite wood products contained in finished goods comply with applicable emission standards. These records must be kept in electronic or hard copy form for a minimum of two years and provided to ARB or local air district personnel upon request. This section does not affect the liability of any person for any violation of section 93120.2(a).

- (c) *Facility inspections.* Retailers may be inspected by ARB or local air district personnel. In the course of an inspection, ARB or local air district personnel may request to audit records or secure samples for testing. Composite wood products or finished goods secured during an inspection are subject to testing, using the applicable enforcement test method specified in section 93120.9, to determine compliance with the applicable emission standards.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.9 *Test Methods.*

- (a) *Compliance Test Methods for HWPW, PB, and MDF.* Compliance with the emission standards for HWPW, PB, and MDF in section 93120.2(a) and, if applicable, section 93120.3(c) or (d) shall be demonstrated by conducting product emissions tests, verified by third party certification as specified in section 93120.4 and conducted using one of the following:
 - (1) The primary method, defined as ASTM E 1333-96(2002) (large chamber test method).
 - (2) A secondary method, defined as specified in ASTM D 6007-02, with the additional conditions specified below:

- (A) The secondary method shall be operated using the testing conditions and loading rates specified in ASTM D 6007-02, and the conditioning time used to establish equivalence in section 93120.9(a)(2)(B). In addition, when testing panels the secondary method shall be operated by testing nine specimens representing evenly distributed portions of an entire panel. The nine specimens shall be tested in groups of three specimens, resulting in three test results, which shall be averaged to represent one data point for the panel.
- (B) Equivalence between the secondary method and the primary method must be established, at least once each year, by the third party certifier for each testing laboratory used by the third party certifier. Minimum requirements for an equivalence demonstration shall include at least ten comparison sample sets, which compare the results of the primary and secondary methods. The following parameters must be met in the comparison:
1. For the primary method, each comparison sample shall consist of the result of simultaneously testing an appropriate number of panels (factoring in the loading rate) from the same batch of panels tested by the secondary method.
 2. For the secondary method, each comparison sample shall consist of testing nine specimens representing evenly distributed portions of an entire panel. The nine specimens shall be tested in groups of three specimens (factoring in the loading rate), resulting in three test results, which shall be averaged to represent one data point for the panel, and matched to their respective primary method comparison sample result.
 3. The ten comparison sample sets shall consist of testing a minimum of five sample sets in each of at least two of the following ranges of formaldehyde concentrations, as measured by the primary method:
 - a. Lower range: less than 0.07 ppm
 - b. Intermediate range: 0.07 to less than 0.15 ppm
 - c. Upper range: 0.15 to 0.25 ppm
 4. The average and standard deviation of the difference of all comparison sets shall be calculated as follows. For each of the two ranges used for testing, the following computations shall be performed:

- a. Denote the number of sets in the given range by n .
- b. Compute the difference between the primary and secondary method value. Denote the difference for the i^{th} set by D_i , where i ranges from 1 to n .
- c. Compute the average, \bar{X} , and standard deviation, S , of the differences according to the following formulas:

$$\bar{X} = \sum_{i=1}^n D_i / n$$

$$S = \sqrt{\sum_{i=1}^n (D_i - \bar{X})^2 / (n - 1)}$$

5. The secondary method shall be considered equivalent to the primary method if the following condition is met for both tested ranges:

$$|\bar{X}| + 0.88S \leq C$$

where C is equal to:

0.026 for the lower range;
 0.038 for the intermediate range; and
 0.052 for the upper range.

6. Equivalence must be established between the primary and secondary method to represent the range in emissions based on the emission standards specified in section 93120.2(a) for composite wood products that a third party certifier is approved to verify under section 93120.4 and, if applicable, the range in emissions for no-added formaldehyde based resins or ULEF resins.

- (3) An alternate secondary test procedure may also be used as specified in sections 93120.9(a)(3)(A) through 93120.9(a)(3)(C).

- (A) Chamber test methods other than ASTM E 1333-96(2002) (large chamber test method) may be used if they are demonstrated, following the minimum requirements specified in section 93120.9(a)(2)(B), to provide equivalent results to those obtained using ASTM E 1333-96(2002). All alternative secondary test

methods must be approved in writing by the Executive Officer prior to use as specified below.

- (B) An application to use an alternative secondary test method must be submitted to the ARB in writing, and must include, at a minimum, the following information and data:
 - 1. A complete description of the test method used to quantify product emissions, including all procedures used, precision and reproducibility, and the criteria used to demonstrate the validity of the test method.
 - 2. Results collected using the alternate secondary test method and corresponding equivalent emissions.
- (C) Within 45 days of receipt of an application, the Executive Officer shall notify the applicant in writing that the application is complete, or if additional information or testing is required to complete the application. If the Executive Officer finds that an application complies with the requirements of this section, then he or she may issue an Executive Order certifying that the alternate secondary test procedure provides equivalent results to ASTM E 1333-96 (2002), and authorize its use for compliance testing.
- (b) *Enforcement Test Method for HWPW, PB, and MDF Samples.* Emission testing of samples of HWPW, PB, and MDF shall be conducted by ARB or local air district personnel using a secondary method, a large chamber [ASTM E 1333-96(2002)], or an alternate secondary test procedure as specified in section 93120.9(a). Sample handling procedures shall be followed as specified in the applicable ASTM method or alternate secondary test procedures.
- (c) *Enforcement Test Method for Finished Goods Containing HWPW, PB, and MDF.* Emission testing of samples of HWPW, PB, and MDF contained in finished goods shall be conducted by ARB or local air district personnel using a secondary method, or an alternate secondary test procedure as specified in section 93120.9(a). Sample handling procedures shall be followed that are consistent with those specified in ASTM D 6007-02 or alternate secondary test procedures.
- (d) *Quality Control Test Method.* A test method correlated to either the primary or secondary methods for performing routine quality control tests as required by section 93120.3. A correlation must be established between the quality control test method and the primary, secondary, or alternate secondary test method. The correlation must be based on a minimum sample size of five data pairs.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.10 *Incorporation by Reference.*

The following documents are incorporated by reference in this airborne toxic control measure:

- (a) ANSI A135.4-2004. American National Standard – Basic Hardboard, 2004.
- (b) ANSI A135.5-2004. American National Standard – Prefinished Hardboard Paneling, 2004.
- (c) ANSI A135.6-2006. American National Standard – Hardboard Siding, 2006.
- (d) ANSI A190.1-2002. American National Standard – Structural Glued Laminated Timber, 2002.
- (e) ANSI A208.1-1999. American National Standard – Particleboard, 1999.
- (f) ANSI A208.2-2002. American National Standard – Medium Density Fiberboard, 2002.
- (g) ANSI/HPVA HP-1-2004. American National Standard for Hardwood and Decorative Plywood, 2004.
- (h) ASTM D 5055-05. Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists, 2005.
- (i) ASTM D 5456-06. Standard Specification for Evaluation of Structural Composite Lumber Products, 2006.
- (j) ASTM D 5582-00. Standard Test Method for Determining Formaldehyde Levels from Wood Products Using a Desiccator, 2000.
- (k) ASTM D 6007-02. Standard Test Method for Determining Formaldehyde Concentration in Air from Wood Products Using a Small Scale Chamber, 2002.
- (l) ASTM E 1333-96(2002). Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber, 2002.
- (m) ILAC. International Laboratory Accreditation Cooperation Mutual Recognition Arrangement, 2000.
- (n) PS 1-07. Voluntary Product Standard – Structural Plywood. National Institute of Standards and Technology, 2007.
- (o) PS 2-04. Voluntary Product Standard – Performance Standard for Wood-Based Structural-Use Panels. National Institute of Standards and Technology, 2004.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.

§ 93120.11 *Severability.*

Each part of this airborne toxic control measure (ATCM) shall be deemed severable, and in the event that any part of this ATCM is held to be invalid, the remainder of this ATCM shall continue in full force and effect.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, and 41712, Health and Safety Code.

§ 93120.12 *Appendices.*

This section contains Appendices 1 - 3 to the Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products.

Appendix 1. *Sell-through Provisions and Dates that Apply to Manufacturers, Distributors, Importers, Fabricators, and Retailers.*

(a) *Sell-through Dates that Apply to Manufacturers of Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF).*

- (1) *Sell-through by Manufacturers of Hardwood Plywood, Particleboard, and Medium Density Fiberboard Manufactured Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Hardwood plywood, particleboard, and medium density fiberboard manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, or offered for sale by the product manufacturer for up to three months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

(A) Hardwood plywood made with a veneer core (HWPW-VC).

1. Panels of HWPW-VC manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by the product manufacturer until March 31, 2009. Beginning April 1, 2009, all HWPW-VC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of HWPW-VC manufactured before January 1, 2010, that comply with the Phase 1 standard, but do not comply with the Phase 2 standard, may be sold, supplied, or offered for sale by the product manufacturer until March 31, 2010. Beginning April 1, 2010, all HWPW-VC subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(B) Hardwood plywood made with a composite core (HWPW-CC).

1. Panels of HWPW-CC manufactured before July 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by the product manufacturer until September 30, 2009. Beginning October 1, 2009, all HWPW-CC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.

2. Panels of HWPW-CC manufactured before July 1, 2012, that comply with the Phase 1 standard, but do not comply with the Phase 2 standard, may be sold, supplied, or offered for sale by the product manufacturer until September 30, 2012. Beginning October 1, 2012, all HWPW-CC subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(C) Particleboard (PB), medium density fiberboard (MDF), and thin MDF.

1. Panels of PB, MDF, and thin MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by the product manufacturer until March 31, 2009. Beginning April 1, 2009, all PB, MDF, and thin MDF subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of PB and MDF manufactured before January 1, 2011, that comply with the Phase 1 standard, but do not comply with the Phase 2 standard, may be sold, supplied, or offered for sale by the product manufacturer until March 31, 2011. Beginning April 1, 2011, all PB and MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.
3. Panels of thin MDF manufactured before January 1, 2012, that comply with the Phase 1 standard, but do not comply with the Phase 2 standard, may be sold, supplied, or offered for sale by the product manufacturer until March 31, 2012. Beginning April 1, 2012, all thin MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(b) ***Sell-through Dates that Apply to Distributors of HWPW, PB, and MDF.***

- (1) *Sell-through by Distributors of Hardwood Plywood, Particleboard, and Medium Density Fiberboard Manufactured Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Hardwood plywood, particleboard, or medium density fiberboard manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, or offered for sale by distributors for up to five months after each of the specified effective dates. The specific sell-

through dates for each of the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

- (A) Hardwood plywood made with a veneer core (HWPW-VC).
 - 1. Panels of HWPW-VC manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2009. Beginning June 1, 2009, all HWPW-VC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
 - 2. Panels of HWPW-VC manufactured before January 1, 2010, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2010. Beginning June 1, 2010, all HWPW-VC subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.
- (B) Hardwood plywood made with a composite core (HWPW-CC).
 - 1. Panels of HWPW-CC manufactured before July 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by distributors until November 30, 2009. Beginning December 1, 2009, all HWPW-CC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
 - 2. Panels of HWPW-CC manufactured before July 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by distributors until November 30, 2012. Beginning December 1, 2012, all HWPW-CC subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.
- (C) Particleboard (PB) and medium density fiberboard (MDF).
 - 1. Panels of PB and MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2009. Beginning June 1, 2009, all PB and MDF subject to the Phase 1 standard must comply with this standard,

regardless of the date on which the products were manufactured.

2. Panels of PB and MDF manufactured before January 1, 2011, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2011. Beginning June 1, 2011, all PB and MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(D) Thin MDF.

1. Panels of thin MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2009. Beginning June 1, 2009, all thin MDF subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of thin MDF manufactured before January 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by distributors until May 31, 2012. Beginning June 1, 2012, all thin MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

- (2) *Sell-through by Distributors of Finished Goods Containing Hardwood Plywood made with a Veneer Core (HWPW-VC), Hardwood Plywood made with a Composite Core (HWPW-CC), Particleboard (PB), Medium Density Fiberboard (MDF), or thin MDF Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Finished goods containing HWPW-VC, HWPW-CC, PB, MDF, or thin MDF manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, offered for sale by distributors for up to eighteen months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

(A) Finished goods containing hardwood plywood made with a veneer core (HWPW-VC).

1. Finished goods containing HWPW-VC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by distributors until June 30, 2010. Beginning July 1, 2010,

finished goods containing HWPW-VC, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.

2. Finished goods containing HWPW-VC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by distributors until June 30, 2011. Beginning July 1, 2011, finished goods containing HWPW-VC, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (B) Finished goods containing hardwood plywood made with a composite core (HWPW-CC).
1. Finished goods containing HWPW-CC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by distributors until December 31, 2010. Beginning January 1, 2011, finished goods containing HWPW-CC, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 2. Finished goods containing HWPW-CC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by distributors until December 31, 2013. Beginning January 1, 2014, finished goods containing HWPW-CC, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (C) Finished goods containing particleboard (PB) and/or medium density fiberboard (MDF).
1. Finished goods containing PB and/or MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by distributors until June 30, 2010. Beginning July 1, 2010, finished goods containing PB and/or MDF, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 2. Finished goods containing PB and/or MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by distributors until June 30, 2012. Beginning July 1, 2012, finished goods containing PB and/or MDF, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.

(D) Finished goods containing thin MDF.

1. Finished goods containing thin MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by distributors until June 30, 2010. Beginning July 1, 2010, finished goods containing thin MDF, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
2. Finished goods containing thin MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by distributors until June 30, 2013. Beginning July 1, 2013, finished goods containing thin MDF, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.

(c) ***Sell-through Dates that Apply to Importers of HWPW, PB, and MDF.***

- (1) *Sell-through by Importers of Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF) Manufactured Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Hardwood plywood, particleboard, or medium density fiberboard manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, offered for sale, or used by importers for up to three months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

(A) Hardwood plywood made with a veneer core (HWPW-VC).

1. Panels of HWPW-VC manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2009. Beginning April 1, 2009, all HWPW-VC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of HWPW-VC manufactured before January 1, 2010, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2010. Beginning April 1, 2010, all HWPW-VC subject to the Phase 2 standard must comply with this standard,

regardless of the date on which the products were manufactured.

(B) Hardwood plywood made with a composite core (HWPW-CC).

1. Panels of HWPW-CC manufactured before July 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by importers until September 30, 2009. Beginning October 1, 2009, all HWPW-CC subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of HWPW-CC manufactured before July 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by importers until September 30, 2012. Beginning October 1, 2012, all HWPW-CC subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(C) Particleboard (PB) and medium density fiberboard (MDF).

1. Panels of PB and MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2009. Beginning April 1, 2009, all PB and MDF subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.
2. Panels of PB and MDF manufactured before January 1, 2011, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2011. Beginning April 1, 2011, all PB and MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(D) Thin MDF.

1. Panels of thin MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2009. Beginning April 1, 2009, all thin MDF subject to the Phase 1 standard must comply with this standard, regardless of the date on which the products were manufactured.

2. Panels of thin MDF manufactured before January 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, offered for sale, or used by importers until March 31, 2012. Beginning April 1, 2012, all thin MDF subject to the Phase 2 standard must comply with this standard, regardless of the date on which the products were manufactured.

(2) *Sell-through by Importers of Finished Goods Containing Hardwood Plywood made with a Veneer Core (HWPW-VC), Hardwood Plywood made with a Composite Core (HWPW-CC), Particleboard (PB), Medium Density Fiberboard (MDF), or thin MDF Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Finished goods containing HWPW-VC, HWPW-CC, PB, MDF, or thin MDF manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, offered for sale by importers for up to eighteen months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

- (A) Finished goods containing hardwood plywood made with a veneer core (HWPW-VC).
 1. Finished goods containing HWPW-VC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by importers until June 30, 2010. Beginning July 1, 2010, finished goods containing HWPW-VC, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 2. Finished goods containing HWPW-VC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by importers until June 30, 2011. Beginning July 1, 2011, finished goods containing HWPW-VC, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (B) Finished goods containing hardwood plywood made with a composite core (HWPW-CC).
 1. Finished goods containing HWPW-CC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by importers until December 31, 2010. Beginning January 1, 2011, finished goods containing HWPW-CC, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.

2. Finished goods containing HWPW-CC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by importers until December 31, 2013. Beginning January 1, 2014, finished goods containing HWPW-CC, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (C) Finished goods containing particleboard (PB) and/or medium density fiberboard (MDF).
1. Finished goods containing PB and/or MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by importers until June 30, 2010. Beginning July 1, 2010, finished goods containing PB and/or MDF, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 2. Finished goods containing PB and/or MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by importers until June 30, 2012. Beginning July 1, 2012, finished goods containing PB and/or MDF, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (D) Finished goods containing thin MDF.
1. Finished goods containing thin MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by importers until June 30, 2010. Beginning July 1, 2010, finished goods containing thin MDF, sold, supplied, or offered for sale must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 2. Finished goods containing thin MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by importers until June 30, 2013. Beginning July 1, 2013, finished goods containing thin MDF, sold, supplied, or offered for sale must comply with the Phase 2 standard, regardless of the date that the product was fabricated.

(d) *Sell-through Dates that Apply to Fabricators Using HWPW, PB, and MDF.*

- (1) *Sell-through by Fabricators of Finished Goods Produced Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Finished goods containing HWPW-VC, HWPW-CC, PB, MDF, or thin MDF that does not comply with the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be used, sold, supplied, offered for sale by fabricators for up to eighteen months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

- (A) Finished goods containing hardwood plywood made with a veneer core (HWPW-VC).
1. Finished goods made with HWPW-VC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2010. Beginning July 1, 2010, all finished goods sold, supplied, or offered for sale must be made with HWPW-VC that complies with the Phase 1 standard, regardless of the date that the finished good was fabricated.
 2. Finished goods made with HWPW-VC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2011. Beginning July 1, 2011, all finished goods sold, supplied, or offered for sale must be made with HWPW-VC that complies with the Phase 2 standard, regardless of the date that the finished good was fabricated.
- (B) Finished goods containing hardwood plywood made with a composite core (HWPW-CC).
1. Finished goods made with HWPW-CC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by fabricators until December 31, 2010. Beginning January 1, 2011, all finished goods sold, supplied, or offered for sale must be made with HWPW-CC that complies with the Phase 1 standard, regardless of the date that the finished good was fabricated.
 2. Finished goods made with HWPW-CC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by fabricators until December 31, 2013. Beginning January 1, 2014, all finished goods sold, supplied, or offered for sale must be made with HWPW-CC that complies with the

Phase 2 standard, regardless of the date that the finished good was fabricated.

- (C) Finished goods containing particleboard (PB) and/or medium density fiberboard (MDF).
 - 1. Finished goods made with PB and/or MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2010. Beginning July 1, 2010, all finished goods sold, supplied, or offered for sale must be made with PB and/or MDF that complies with the Phase 1 standard, regardless of the date that the finished good was fabricated.
 - 2. Finished goods made with PB and/or MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2012. Beginning July 1, 2012, all finished goods sold, supplied, or offered for sale must be made with PB and/or MDF that complies with the Phase 2 standard, regardless of the date that the finished good was fabricated.

- (D) Finished goods containing thin MDF.
 - 1. Finished goods made with thin MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2010. Beginning July 1, 2010, all finished goods sold, supplied, or offered for sale must be made with thin MDF that complies with the Phase 1 standard, regardless of the date that the finished good was fabricated.
 - 2. Finished goods made with thin MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by fabricators until June 30, 2013. Beginning July 1, 2013, all finished goods sold, supplied, or offered for sale must be made with thin MDF that complies with the Phase 2 standard, regardless of the date that the finished good was fabricated.

(e) *Sell-through Dates that Apply to Retailers of HWPW, PB, and MDF.*

- (1) *Sell-through by Retailers of Hardwood Plywood made with a Veneer Core (HWPW-VC), Hardwood Plywood made with a Composite Core (HWPW-CC), Particleboard (PB), Medium Density Fiberboard (MDF), or thin MDF Panels Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards. Hardwood plywood, particleboard, or*

medium density fiberboard panels manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, or offered for sale by retailers for up to twelve months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

(A) Hardwood plywood made with a veneer core (HWPW-VC).

1. Panels of HWPW-VC manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until December 31, 2009. Beginning January 1, 2010, all HWPW-VC, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date on which the products were manufactured.
2. Panels of HWPW-VC manufactured before January 1, 2010, that do not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until December 31, 2010. Beginning January 1, 2011, all HWPW-VC, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date on which the products were manufactured.

(B) Hardwood plywood made with a composite core (HWPW-CC).

1. Panels of HWPW-CC manufactured before July 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until June 30, 2010. Beginning July 1, 2010, all HWPW-CC, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date on which the products were manufactured.
2. Panels of HWPW-CC manufactured before July 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until June 30, 2013. Beginning July 1, 2013, all HWPW-CC, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date on which the products were manufactured.

(C) Particleboard (PB) and/or medium density fiberboard (MDF).

1. Panels of PB or MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until

December 31, 2009. Beginning January 1, 2010, all PB or MDF, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date on which the products were manufactured.

2. Panels of PB or MDF manufactured before January 1, 2011, that do not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until December 31, 2011. Beginning January 1, 2012, all PB or MDF, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date on which the products were manufactured.

(D) Thin MDF.

1. Panels of thin MDF manufactured before January 1, 2009, that do not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until December 31, 2009. Beginning January 1, 2010, all thin MDF, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date on which the products were manufactured.
2. Panels of thin MDF manufactured before January 1, 2012, that do not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until December 31, 2012. Beginning January 1, 2013, all thin MDF, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date on which the products were manufactured.

- (2) *Sell-through by Retailers of Finished Goods Containing Hardwood Plywood made with a Veneer Core (HWPW-VC), Hardwood Plywood made with a Composite Core (HWPW-CC), Particleboard (PB), Medium Density Fiberboard (MDF), or thin MDF Before the Effective Dates of the Phase 1 and Phase 2 Emission Standards.* Finished goods containing HWPW-VC, HWPW-CC, PB, MDF, or thin MDF manufactured before the Phase 1 and Phase 2 effective dates specified in section 93120.2(a) may be sold, supplied, offered for sale, or used by retailers for up to eighteen months after each of the specified effective dates. The specific sell-through dates for the Phase 1 and Phase 2 emission standards specified in section 93120.2(a) are as follows:

- (A) Finished goods containing hardwood plywood made with a veneer core (HWPW-VC).
 - 1. Finished goods containing HWPW-VC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until June 30, 2010. Beginning July 1, 2010, finished goods containing HWPW-VC, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 - 2. Finished goods containing HWPW-VC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until June 30, 2011. Beginning July 1, 2011, finished goods containing HWPW-VC, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (B) Finished goods containing hardwood plywood made with a composite core (HWPW-CC).
 - 1. Finished goods containing HWPW-CC that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until December 31, 2010. Beginning January 1, 2011, finished goods containing HWPW-CC, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 - 2. Finished goods containing HWPW-CC that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until December 31, 2013. Beginning January 1, 2014, finished goods containing HWPW-CC, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date that the product was fabricated.
- (C) Finished goods containing particleboard (PB) and/or medium density fiberboard (MDF).
 - 1. Finished goods containing PB and/or MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until June 30, 2010. Beginning July 1, 2010, finished goods containing PB and/or MDF, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
 - 2. Finished goods containing PB and/or MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for

sale by retailers until June 30, 2012. Beginning July 1, 2012, finished goods containing PB and/or MDF, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date that the product was fabricated.

(D) Finished goods containing thin MDF.

1. Finished goods containing thin MDF that does not comply with the Phase 1 standard may be sold, supplied, or offered for sale by retailers until June 30, 2010. Beginning July 1, 2010, finished goods containing thin MDF, sold, supplied, or offered for sale, must comply with the Phase 1 standard, regardless of the date that the product was fabricated.
2. Finished goods containing thin MDF that does not comply with the Phase 2 standard may be sold, supplied, or offered for sale by retailers until June 30, 2013. Beginning July 1, 2013, finished goods containing thin MDF, sold, supplied, or offered for sale, must comply with the Phase 2 standard, regardless of the date that the product was fabricated.

Appendix 2. *Quality Assurance Requirements for Manufacturers of Composite Wood Products.*

(a) *Purpose.*

The purpose of Appendix 2 of section 93120.12 is to provide quality assurance requirements for manufacturers of composite wood products to ensure compliance with the applicable formaldehyde emission standards in section 93120.2(a). Manufacturers must demonstrate compliance with the emission standards by way of third party certification, and must comply with the quality assurance requirements contained in Appendix 2. The requirements of Appendix 2 do not apply to product types for manufacturers who have received ARB approval to use no-added formaldehyde based resins or ULEF resins that have been exempted from third party certification requirements for those product types, except for the purpose of applying for re-approval to continue to use no-added formaldehyde based resins as specified in section 93120.3(c) or ULEF resins as specified in section 93120.3(d).

Requirements are specified for: preparation of a quality control manual, establishment of a quality control function at the manufacturing plant (including testing equipment and designated quality control personnel), routine quality control procedures conducted at the plant, participation in periodic inspections and product testing by the third party certifying organization, and recordkeeping. These requirements are designed to ensure that certified unfinished (including sanded) composite wood products meet the applicable emission standards. Note: All panels must be tested in an unfinished condition, prior to application of a finishing or topcoat.

(b) *Responsibility for Product Performance.*

The manufacturer is responsible for the performance of all certified products, including meeting the applicable standard(s) in section 93120.2(a) against which its products are certified.

(c) *Quality Control Manual.*

Each manufacturing plant must have a written quality control manual, which shall, at a minimum, contain the following:

- (1) organizational structure of the quality control department;
- (2) sampling procedures;
- (3) method of handling samples;
- (4) frequency of small scale quality control testing;

- (5) procedures to identify changes in formaldehyde emissions resulting from production changes (e.g., increase in percentage of resin, increase in formaldehyde/urea molar ratio in the resin, or decrease in press time);
- (6) provisions for additional testing;
- (7) recordkeeping requirements; and
- (8) average percentage of resin and press time for each product type.

(d) *Quality Control Facilities.*

At each manufacturing plant or location designated by manufacturers with more than one manufacturing plant, laboratory facilities and equipment shall be provided and properly maintained as a quality control facility for conducting such tests as are required by Appendix 2. Alternatively, the quality control facility may be a contract laboratory or a laboratory operated by an approved third party certifier. Equipment shall be calibrated in accordance with the equipment manufacturer's instructions. The original and any subsequent equipment calibration records shall be maintained.

(e) *Quality Control Personnel.*

(1) Quality Control Manager

Each plant shall have a person with adequate experience and/or training to be responsible for formaldehyde emission quality control. This person shall report to the plant manager and shall be identified to the third party certifier. The third party certifier shall be informed in writing within ten days of any change in his or her identity. The quality control manager shall review and approve all reports of routine small scale testing conducted on the plant's production. If a manufacturer with one or more manufacturing plants uses a testing facility to test routine quality control production samples, the quality control manager shall be responsible for ensuring that the samples are collected, packaged, and shipped according to the procedures specified in the quality control manual. The plant quality control manager shall be responsible for working with the company's testing facility to monitor results, and shall immediately inform the third party certifier by telephone, email, or FAX and by letter of any changes in production that require re-inspections as set forth in section 93120.12, Appendix 3.

(2) Quality Control Employee

Quality control employees shall have adequate experience and/or training to conduct accurate chemical quantitative analytical tests. The

Quality Control Manager shall identify each person conducting routine small scale tests to the third party certifier. All quality control employees must be certified annually by the third party certifier for operation of the quality control test method.

(3) Chemical Analysis Tests

(A) Duplicate Analysis

The manufacturer will contact the third party certifier to request certification of any quality control employee identified by the Quality Control Manager. The third party certifier or plant Quality Control Manager shall test one portion of a formaldehyde solution based on the manufacturer's range in expected formaldehyde emissions; the employee to be certified shall test another portion of the same solution. The results of each test must be within a range of concentrations established by the third party certifier, to verify the correlation of the quality control test method.

(B) Blind Samples

The employee to be certified must determine the formaldehyde content of four sample solutions submitted to them by the third party certifier or plant Quality Control Manager. The formaldehyde content of the four sample solutions must be determined to be within a range of concentrations established by the third party certifier, to verify the correlation of the quality control test method.

(f) *Primary or Secondary Method Tests.*

(1) Initial (Qualifying) Primary or Secondary Method Test

Each product type, from each production line of each plant must be tested in a primary or secondary method testing chamber. The laboratory operating the chamber must be accredited by an accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC, 2000). The formaldehyde test methods used by the laboratory must be stated in its scope of accreditation. For the purpose of a qualifying test and with approval of the third party certifier, a manufacturer may group two or more product types together if they have similar emission characteristics. If a plant elects to have all or multiple products represented by a single product type, an initial qualification test failure by that representative product will cause certification to lapse on all other products represented. The emissions from each product type from each production line must not exceed the applicable standard.

(2) Correlation of Primary or Secondary Method and Small Scale Test Values

In order to qualify for certification, the manufacturer must establish a statistical correlation between values obtained from the primary or secondary test method and the values from the small scale tests for each product type and production line. For purposes of establishing this correlation, data for products from the manufacturer's plant or data obtained by a third party certifier must be used. The correlation must be based on a minimum sample size of five data pairs.

(3) Subsequent (Verifying) Primary or Secondary Method Tests

(A) Quarterly Chamber Test

1. Particleboard (PB) and Medium Density Fiberboard (MDF)

At least quarterly, a primary or secondary method test shall be conducted on randomly selected samples of each product type, as determined by the third party certifier. Manufacturers that use ULEF resins and have received ARB approval under section 93120.3(d)(1) need only have primary or secondary method tests conducted every six months. For the purpose of a verifying primary or secondary method test, a manufacturer may group two or more product types together if they have similar emission characteristics. If a plant elects to have all or multiple products represented by a single product type, a quarterly qualification test failure by that representative product will cause certification to lapse on all other products represented. The emissions from each product type must not exceed the applicable standard.

2. Hardwood Plywood (HWPW)

At least quarterly, a primary or secondary method test shall be conducted on randomly selected samples of the HWPW product determined by the third party certifier, after review of routine weekly quality control data, to have the highest potential to emit formaldehyde. Manufacturers that use ULEF resins and have received ARB approval under section 93120.3(d)(1) need only have primary or secondary method tests conducted every six months. For the purpose of a verifying primary or secondary method test, a manufacturer may choose to group two or more product types together if they have similar emission characteristics. If a plant elects to have all or multiple products

represented by a single product type, a quarterly qualification test failure by that representative product will cause certification to lapse on all other products represented. The emissions from each product type must not exceed the applicable standard.

(B) Failure of a Primary or Secondary Method Test

1. Exceedance of standards

If the emission value obtained during a subsequent (verifying) primary or secondary method test exceeds the applicable standard, the tested product will be in violation of section 93120.2(a) and certification of that product type will be suspended until re-qualification. In such an event, the third party certifier is required to notify the manufacturer and ARB. If primary or secondary method and small scale test results on the same product differ, the primary or secondary method result shall be considered the benchmark value.

Manufacturers must submit the last month of quality control testing data to the third party certifier, for verification that the quality control limit (QCL) or shipping QCL (if applicable) reflects an accurate correlation between the primary or secondary method and the plant's quality control tests.

2. Re-qualification

Should an exceedance occur, plant production of that product type may be reinstated only upon successful completion of another primary or secondary method test. The re-qualification primary or secondary method test must be conducted on the same product type as that which failed during the verifying test.

3. Disposition of Failed Lot

The manufacturer may obtain certification of a lot which has failed the primary or secondary method test if the manufacturer can demonstrate to the satisfaction of third party certifier that: (1) each panel is treated with a scavenger or handled by other means of reducing formaldehyde emissions (e.g., aging); and (2) panels randomly selected from the treated panels are tested under and pass the primary or secondary method test within six weeks of the initial determination of a failed lot.

(g) *Small Scale Quality Control Tests at Plant.*

Each manufacturing plant shall conduct small scale quality control tests for each product type and production line to ascertain that its certified panels do not exceed the applicable emission standard. Alternatively, the quality control tests may be conducted by a contract laboratory or a laboratory operated by an approved third party certifier. Unless prior notice is given, all lots of each product type being certified for compliance at each plant will be tested, with each lot's small scale quality control tests reported to the certifier.

(1) **Approved Small Scale Test Methods**

The following small scale tests may be used as quality control test methods:

- (A) ASTM D 5582-00 (desiccator);
- (B) ASTM D 6007-02 (small chamber); and
- (C) alternative small scale tests that can be shown to correlate to the primary or secondary method tests as specified in subsection (g)(2) and are approved by the Executive Officer.

(2) **Correlation of Quality Control Tests with Primary or Secondary Method Tests**

Each plant's quality control test results must be shown to correlate to primary or secondary method test results. The correlation must be based on a minimum sample size of five data pairs. If data shows variation from the previously used correlation, the manufacturer shall work with the certifier to evaluate the data to determine if a statistically significant change has occurred. If a change is noted, a new correlation curve will be established for the manufacturer by the certifier.

(3) **Quality Control Limit**

Manufacturers will work with their third party certifier to establish a Quality Control Limit (QCL) at each manufacturer's plant for each product type and production line. The QCL is the value for any approved small scale quality control test which is based on the correlative equivalent to the value in a primary or secondary method test permitted by the applicable standard. In addition to the QCL, an excursion limit shall be established to account for process and testing variation to keep the product's emissions from exceeding the

applicable standard. In the event that a manufacturer produces product lots that consistently exceed the applicable QCL, based on exceedance criteria established by the third party certifier, the certifier shall be notified promptly.

(4) Basic Testing Frequency

(A) PB and MDF

Manufacturers of PB and MDF must conduct routine small scale quality control tests at least once per shift (8 or 12 hours, plus or minus one hour of production) for each production line for each product type. Manufacturers of PB and MDF that use ULEF resins and have received ARB approval under section 93120.3(d) must conduct routine quality control tests at least weekly for each production line for each product type. Quality control samples shall be analyzed within a period of time specified in the manufacturer's quality control manual to avoid distribution of non-complying lots. In addition, quality control tests must be performed whenever a product type production ends without reaching eight hours of production or whenever one of the following occurs:

1. the resin formulation is changed so that the formaldehyde to urea ratio is increased;
2. an increase by more than ten percent in the amount of formaldehyde resin used;
3. a decrease in the designated press time by more than 20 percent; or
4. when the Quality Control Manager or Quality Control Employee has reason to believe that the panel being produced may not meet the requirements of the applicable standards.

(B) Reduction in Testing Frequency for PB and MDF

Testing frequency may be reduced to no less frequently than one test per 48-hour production period when the plant or production line demonstrates consistent operations and low variability of test values to the satisfaction of the third party certifier, based on criteria established by the certifier. Manufacturers must obtain advance written approval from the third party certifier and keep this written approval as part of the manufacturer record keeping requirements.

(C) HWPW

Manufacturers of HWPW must conduct routine small scale quality control tests on each product type and product line based on

production at the plant. Quality control samples shall be analyzed within a period of time specified in the manufacturer's quality control manual to avoid distribution of non-complying lots. Testing frequency shall be as follows:

Weekly HWPW Production (sq. ft.)	Minimum Number of Routine Tests/Week Per Product Type and Product Line
Less than 200,000	1
200,000 – 400,000	2
Greater than 400,000	4

(5) Non-complying Lots

A "non-complying lot" is any lot that has a test value in excess of the applicable standard. Test results from all non-complying lots shall be maintained as required by the manufacturer's recordkeeping requirements. For a non-complying lot to be certified, it must meet the requirements of subsections (g)(6) and (g)(7) below.

(6) Disposition of Non-complying Lots

A non-complying lot must be isolated from certified lots and the third party certifier must be notified. The non-complying lot cannot be certified unless it is determined to be in compliance by treating pursuant to subsection (g)(7) below and retesting pursuant to subsection (g)(8). If the manufacturer chooses not to certify, or is not able to certify a non-complying lot, the lot must not be labeled for sale in California. If the lot had already been labeled for sale in California, the label must be removed or obliterated. The original test value of that lot shall be maintained in the certification calculations for standard deviation and consecutive lots. Such lots shall be identified in the quality control chart.

(7) Treatment of Non-complying Product

Production which has failed the small scale test may be retested for certification if each panel is treated with a scavenger or handled by other means of reducing formaldehyde emissions (e.g., aging).

(8) Small Scale Retesting

The manufacturer may choose to retest a non-complying lot. When retesting a non-complying lot, the following criteria apply:

- (A) At least three test panels shall be selected from three separate bundles. They should be selected in such a manner that is representative of the entire lot. Each panel shall be tested by the plant's small scale quality control test.
- (B) Test samples shall not be selected from the top or bottom panels of a bundle.
- (C) The average of three representative samples must test at or below the QCL or shipping QCL.
- (D) In the event that a non-complying lot cannot be certified, the certifier shall be informed promptly in writing.

(9) Shipping QCL

A manufacturer may choose to establish a Shipping QCL, defined the same way as is the QCL above in subsection (g)(3), but based on panels prior to shipment rather than immediately after manufacturing. If a manufacturer chooses to establish a Shipping QCL that is distinct from the QCL, the manufacturer shall work with their third party certifier to establish this limit. The procedures for handling lots that do not comply with the Shipping QCL, and the procedures for retesting of such lots, are identical to the procedures for lots that do not comply with the QCL, as described above in subsections (g)(5) through (g)(8).

(10) Plant Reporting

Each manufacturer shall maintain for a minimum of two years the product data reports for each plant, production line and product type, and shall submit copies to the certifier at least monthly. The reports shall include a data sheet for each specific product with test and production information, and a quality control graph containing:

- (A) QCL;
- (B) excursion limit;
- (C) shipping QCL (if applicable);
- (D) results of quality control tests; and
- (E) retest values.

(h) *Recordkeeping.*

Manufacturers shall maintain complete records documenting the following:

- (1) small scale test results, including testing frequency;
- (2) production sequence;
- (3) changes in the resin percentage for any product type, from levels set by the quality control manual, by more than ten percent (calculated on the basis of resin solids and oven dry wood weight of the face and core furnish, adjusted proportionately);
- (4) increases in the formaldehyde/urea mole ratio of the resin;
- (5) changes in press time by more than 20 percent for any product from the levels set in the plant quality control manual;
- (6) testing of Quality Control Employees;
- (7) disposition of non-conforming products;
- (8) calibration of on-site primary or secondary test methods (if any); and
- (9) other records requested by the certifier under its discretion relating to section 93120.12, Appendix 3.

These records shall be made readily available to the certifier. Records shall be retained for a minimum of 2 years in electronic or hard copy form. Records shall also be provided to ARB upon request.

Appendix 3. *Requirements for Third Party Certifiers of Composite Wood Products.*

(a) *Purpose.*

The purpose of Appendix 3 of section 93120.12 is to specify requirements for ARB-approved third party certifiers for their certification of composite wood products with regard to the formaldehyde emission standards specified in section 93120.2(a), and when applicable, product types for manufacturers who are applying for re-approval to continue to use no-added formaldehyde based resins as specified in section 93120.3(c) or ULEF resins as specified in section 93120.3(d).

(b) *Overview of Third Party Certifier Requirements.*

(1) ARB-approved third party certifiers shall do the following:

- (A) Verify that manufacturers are complying with the quality assurance requirements specified in section 93120.12, Appendix 2.
- (B) Verify manufacturer small scale test results compared to primary or secondary method results.
- (C) Work with manufacturers to establish quality control, excursion, and, if applicable, shipping quality control limits for each product type and production line. In addition, certifiers will inform manufacturers of criteria that will be used to determine if product lots are consistently exceeding the applicable QCL, as specified in section 93120.12, Appendix 2, subsection (g)(3); and criteria the certifier will use to allow a reduction in testing frequency for PB and MDF, as specified in section 93120.12, Appendix 2, subsection (g)(4)(B).
- (D) Provide independent inspections and audits of manufacturers and records.
- (E) Provide manufacturers with their ARB-approved third party certifier number.
- (F) Use laboratories and primary or secondary methods for conducting testing that are certified by an accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC, 2000). The formaldehyde test methods used by the laboratory shall appear in its scope of accreditation. Each laboratory must be re-certified annually. Each

laboratory must also participate in an interlaboratory testing comparison with laboratories using similar primary or secondary methods for the same composite wood products. Laboratories must participate in an interlaboratory comparison during the first year the laboratory is used by a third party certifier, followed by participation in interlaboratory comparisons every two years.

- (G) Maintain records in electronic or hard copy form for two years, for review by ARB upon request, on:
 - 1. manufacturers that have been certified, with designated identification codes (if any);
 - 2. results of inspections and tests conducted for each manufacturer;
 - 3. list of certified laboratories and primary or secondary test methods utilized by the third party certifier, including the test conditions, conditioning time, test results, and the types of composite wood products used to establish equivalence of a secondary method;
 - 4. correlations between small scale test results and primary or secondary method results by manufacturer;
 - 5. manufacturers of PB and MDF that were allowed to reduce their testing frequency, as specified in section 93120.12, Appendix 2, subsection (g)(4)(B); and
 - 6. the ARB Executive Order approving the third party certifier.
- (H) On or before March 1 of each year, provide an annual report to ARB for the previous calendar year that includes:
 - 1. manufacturers certified during the previous calendar year, including resins used by manufacturers, and the average and range in formaldehyde emissions by resin and product type;
 - 2. list of non-complying events by manufacturer as specified in section 93120.12, Appendix 2;
 - 3. certified laboratories and primary or secondary test methods utilized by the third party certifier; and
 - 4. results of interlaboratory testing comparisons for laboratories used by the third party certifier.

(c) *Initial Plant Qualification.*

Upon completion of a contract between a third party certifier and a manufacturer, a third party certifier shall conduct one or more inspections of each manufacturer's plant. The cost of such inspections shall be borne by the manufacturer. The purpose of the inspection shall be to determine that the procedures and processes of each plant conform, or can be made to conform, to the requirements of section 93120.12, Appendix 2. Initial plant qualification requirements include:

- (1) a written quality control manual approved by the third party certifier;
- (2) quality control facilities and personnel approved by the third party certifier;
- (3) passage of a primary or secondary method qualifying test(s);
- (4) routine small scale quality control test(s), approved by the third party certifier;
- (5) a procedure for selecting samples, approved by the third party certifier; and
- (6) correlation values between the routine small scale quality control test(s) and the primary or secondary method test(s) that are approved by the third party certifier.

(d) *Primary or Secondary Method Tests.*

Third party certifiers shall work with manufacturers to ensure that the requirements of section 93120.12, Appendix 2, subsection (f), are complied with.

(1) Sample Selection, Handling, and Shipping

Primary or secondary method samples shall be randomly chosen from a single lot that is ready for shipment. Neither the top nor bottom composite wood products of a bundle shall be selected. The composite wood products must be dead-stacked or air tight wrapped between the time of sample selection and the start of test conditioning. Samples shall be promptly labeled, signed by the third party certifier, bundled air tight, wrapped in polyethylene, protected by cover sheets, and promptly shipped to the primary or secondary method testing facility. Conditioning shall begin as soon as possible, but not in excess of 30 days after production. At the plant's option, a second sample set (a reserve set) may be selected, handled and shipped in the same manner as the original.

(2) Additional (Verifying) Primary or Secondary Method Tests

Additional primary or secondary method tests shall be conducted as soon as possible if the third party certifier determines that an additional primary or secondary method test is necessary to ensure compliance with the relevant standard.

(3) Witnessing of Primary or Secondary Method Tests

The third party certifier may, in its discretion, agree to witness primary or secondary method testing at a certified laboratory rather than performing the test at its laboratory.

(A) Conditioning

The third party certifier shall review the records of temperature, humidity, and ambient formaldehyde concentration in the conditioning area to verify that these conditions did not exceed the limits specified in the primary or secondary method during the conditioning period.

(B) Testing

The third party certifier or the primary or secondary method operator under the certifier's supervision shall take air samples and analyze them for formaldehyde according to the primary or secondary method. The results will be reported to the manufacturer and to the certifier.

The primary or secondary method operator or certifier shall have the option of testing a second set of air samples to confirm a questionable test value. If a second set of air samples is taken, it must be taken within the time parameters defined in the primary or secondary method.

If the second sample set of air specimens falls within a range of concentrations, established by the third party certifier, of the test values from the first sample set, the two values shall be averaged. If the test value from the second set of air samples varies more than the range of concentrations, established by the third party certifier, from the first, the primary or secondary method test shall be null and void.

(C) Identification

Upon completion of the test, the chamber used in the primary or secondary method test shall be opened and the certifier shall verify that the panels or samples inside are the proper test specimens.

(e) *Inspections by Third Party Certifier.*

(1) Purpose

After a manufacturer has been verified by an ARB-approved third party certifier to report their products as being certified with the certifier's ARB-assigned number, the certifier shall conduct periodic on-site inspections of the plant and production line where each certified product type is produced to ensure full compliance with the provisions of section 93120.12, Appendix 2, and the plant's quality control manual and practices. ARB or local air district personnel may also conduct on-site inspections at the manufacturer to ensure compliance with the standards in section 93120.2(a).

(2) Frequency

Inspections shall occur at least once per quarter.

(3) Inspection Procedures

The certifier shall be given full cooperation by the composite wood manufacturer in all aspects of the inspection including, but not limited to, the following:

- (A) reviewing formaldehyde emission quality control records;
- (B) reviewing production records for press times and urea-formaldehyde resin usage;
- (C) examining formaldehyde emission quality control procedures;
- (D) selection of sample panels for emission testing;
- (E) interviewing and testing of quality control employees; and
- (F) complete access to the Quality Control Manager and any quality control employee involved with formaldehyde certification. The certifier may be excluded from plant areas considered confidential, providing such exclusion does not prevent or hinder the certifier from performing the required duties.

(4) Sample Selection and Testing Procedures

The certifier may conduct a small scale test during his visit. One panel of a composite wood product to be certified shall be selected for a

single test. The result of this test shall be entered into the record of test values maintained by the manufacturer. If the addition of this test value to the record causes the tested lot to be a non-complying lot, the lot shall be isolated and handled following the procedures for non-complying lots in section 93120.12, Appendix 2.

(5) Report of Findings

Upon completion of the inspection, the certifier shall prepare findings in writing and review them with the Quality Control Manager or plant manager, if available. As soon as complete test data are available, the certifier shall provide a written report to the plant stating the test results and advising the plant of any deficiencies that must be corrected to maintain certification.

(f) *Re-Inspections.*

In the event that a manufacturer produces product lots that consistently exceed the applicable QCL, the certifier shall be notified promptly. The certifier may re-inspect or audit the plant at least once per month for a period of three months, before returning to the prior inspection frequency. The certifier may also require the manufacturer to demonstrate conformance to the requirements of initial plant qualification.

(g) *Confidentiality.*

All information and documentation supplied by the manufacturer to the certifier pursuant to section 93120.12, Appendix 3, shall be considered confidential and shall not be disclosed by the certifier except as may be required by ARB.

The certifier shall consider confidential any observations of equipment, process, techniques, or other matters known by the certifier to be considered proprietary by the manufacturer.

Note: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, 41511, and 41712, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39665, 39666, 41511, and 41712, Health and Safety Code.