

**Public Hearing to Consider the Proposed
Amendments to the Airborne Toxic Control
Measure for Chromium Electroplating and
Chromic Acid Anodizing Operations**

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and
Agency Response**

*Public Hearing Date: January 27, 2023, and
May 25, 2023*

Agenda Item No.: 23-1-7 and 23-5-2

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List of Abbreviations and Acronyms

$\mu\text{g}/\text{m}^3$	Microgram Per Cubic Meter
2007 ATCM	The 2007 Chrome Plating ATCM
AB	Assembly Bill
APCD	Air Pollution Control District
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
Board	California Air Resources Board
CAA	Clean Air Act
CalEPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CAP	Community Air Protection
CARB	California Air Resources Board
CCR	California Code of Regulations
CDOF	California Department of Finance
CERP	Community Emissions Reduction Plan
CFR	Code of Federal Regulations
Cr(VI)/Cr ₆	Hexavalent Chromium
DOD	U.S. Department of Defense
DTSC	Department of Toxic Substances Control
EA	Environmental Analysis
EF	Emission Factor
EO	Executive Officer, CARB
EU	European Union
FAA	Federal Aviation Administration
FRAQMD	Feather River Air Quality Management District
H ₂ O	Water
HRA	Health Risk Assessment
HSC	Health and Safety Code
ISOR	Initial Statement of Reasons

MATES IV	Multiple Air Toxics Exposure Study IV
MATES V	Multiple Air Toxics Exposure Study V
MIL-SPEC	Military Specifications
NAAQS	National Ambient Air Quality Standards
OEHHA	Office of Environmental Health Hazard Assessment
OEM	Original Equipment Manufacturer
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PM	Particulate Matter
PM2.5	Fine Particulate Matter (≤ 2.5 micrometer in diameter)
ppb	Parts Per Billion
ppm	Parts Per Million
PTE	Permanent Total Enclosure
REACH	European Union Registration, Evaluation, Authorization, and Restriction of Chemicals Regulation
REMI	Regional Economic Models, Inc.
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAPCD	San Diego Air Pollution Control District
SERDP	Strategic Environmental Research Defense Program
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SRIA	Standardized Regulatory Impact Assessment
TAC	Toxic Air Contaminant
TSA	Tartaric Sulfuric Acid
U.S. EPA	United States Environmental Protection Agency
VCAPCD	Ventura County Air Pollution Control District

I. General

The Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), entitled “Public Hearing to Consider the Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing Operations,”¹ released November 29, 2022, is incorporated by reference herein. The Staff Report contained a description of the rationale for the Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing Operations (Proposed Amendments). This rulemaking amends the Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities (Chrome Plating ATCM), which has been effective since October 24, 2007 (2007 ATCM). On November 29, 2022, all references relied upon and identified in the Staff Report were made available to the public.

As explained in the Staff Report, the Proposed Amendments reduce the exposures and health impacts from hexavalent chromium emitted from decorative and hard chrome plating and chromic acid anodizing facilities in communities near these sources by eliminating toxic hexavalent chromium emissions from the chrome plating industry in California over time. The Proposed Amendments also address cumulative exposures to hexavalent chromium within communities that could be impacted by multiple chrome plating operations.

The Proposed Amendments require facilities to cease using hexavalent chromium for the purposes of decorative chrome plating by January 1, 2027, or by January 1, 2030, if they elect to comply with the alternative phase out pathway. In the interim, the Proposed Amendments also require decorative plating facilities to comply with housekeeping requirements and best management practices to reduce fugitive hexavalent chromium emissions as long as they continue to use hexavalent chromium. The Proposed Amendments require decorative chrome plating facilities that elect to comply with the alternative phase out pathway to comply with building enclosure requirements starting in 2026 to reduce fugitive hexavalent chromium emissions prior to the 2030 phase out date. The Proposed Amendments require hard chrome plating and chromic acid anodizing facilities (collectively referred to as “functional plating facilities”) to cease using hexavalent chromium by January 1, 2039. In the interim, the Proposed Amendments require functional plating facilities to comply with lower emission limits and to implement building enclosure requirements, best management practices, and housekeeping requirements to reduce fugitive emissions prior to the 2039 phase out. In addition, the Proposed Amendments require CARB to complete two technology reviews on alternatives to hexavalent chromium in functional plating by January 1, 2032, and January 1, 2036.

On November 29, 2022, the California Air Resources Board (CARB) posted the “Notice of Public Hearing” (the “45-Day”) and Staff Report on CARB’s [Rulemaking 2023 Chrome Plating ATCM](#) website for public review and comment through January 17, 2023. During this 45-Day comment period, the Board received 81 written comments.

On January 27, 2023, CARB held the first public hearing to consider the Proposed Amendments. The Board received 96 additional written and oral comments from the public. After considering staff’s presentation of the Proposed Amendments and all public comments

¹ CARB, *Staff Report: Public Hearing to Consider the Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing Operations*

received, the Board highlighted the need to reduce hexavalent chromium emissions from the chrome plating industry to zero to prevent an endangerment of public health. Additionally, the Board directed staff to extend the phase out date for decorative plating facilities to provide additional time for facilities to transition to alternative technology.

Based on the Board's direction, staff proposed to provide an alternative phase out pathway for decorative plating facilities with a phase out date of January 1, 2030, instead of January 1, 2027, that requires facilities to implement building enclosure requirements to reduce fugitive emissions in the interim. Staff also corrected transcription errors in Table 1 of Attachment 2. Staff's proposed changes and supporting documents were made available for a 15-day comment period through a "Notice of Public Availability of Modified Text and Availability of Additional Documents and Information" as required by Government Code section 11346.8 and section 11347.1. The First 15-Day Notice, modified regulatory language, and additional supporting documents were posted on March 27, 2023, (the "First 15-Day") on CARB's *Rulemaking 2023 Chrome Plating ATCM* website, for public review and comment through April 11, 2023. During the First 15-Day comment period, the Board received 22 additional written comments.

On March 28, 2023, Staff received a comment regarding an error in the values presented in Table 1 of Attachment 2 of the First 15-Day Notice. Staff corrected the error, and the changes were made available for a second 15-day comment period through a "Second Notice of Public Availability of Additional Information" (the "Second 15-Day"). The Second 15-Day Notice was posted on April 26, 2023, on CARB's *Rulemaking 2023 Chrome Plating ATCM* website, for public review and comment through May 11, 2023. No modifications were made to the proposed regulatory text in the Second 15-Day Notice. During the Second 15-Day comment period, the Board received 16 additional written comments. Staff did not make any changes to the Proposed Amendments based on the comments received during the Second 15-Day comment period.

On May 19, 2023, CARB staff posted written responses to the Draft Environmental Analysis (EA) and the Final EA for public review. On May 25, 2023, the Final EA, Response to Comments on the Draft EA, Proposed Resolution 23-16, and recommended changes to the Proposed Amendments were presented at the second Board Hearing. At that hearing, the Board adopted Resolution 23-16.

Resolution 23-16 certified the Final EA, including the Response to Comments on the Draft EA, and directed the Executive Officer (EO) to consider written comments submitted during the public review period and to make any conforming modifications that are appropriate available for public comment. If conforming modifications are made, the modified regulatory language, with any additional supporting documents and information, will be made available for public comment for a period of at least 15 days as required by Government Code section 11346.8. The EO was given authority to both (1) either approve or disapprove proposed changes in regulatory language under Government Code section 11346.8(c), and (2) conduct any appropriate further environmental review associated with such changes, consistent with the Board's Certified Regulatory Program regulations, at California Code of Regulations, title 17, sections 60000-60008, for those sufficiently related substantial modifications.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text. The FSOR also contains a summary of the comments received during the formal rulemaking

process and CARB's response to those comments. This FSOR hereby incorporates by reference the Response to Comments on the Draft Environmental Analysis Prepared for the Proposed Amendments, which was posted on May 24, 2023.²

A. Mandates and Fiscal Impacts to Local Governments and School Districts

The Board has determined that this regulatory action will result in a mandate to local agencies but not to school districts. However, the Board finds that these costs are not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500) because this action neither compels local agencies to provide new governmental functions (i.e., it does not require such agencies to provide additional services to the public), nor imposes requirements that apply only to local agencies or school districts.³ Instead, this regulatory action establishes requirements that apply to all individuals and entities that own or operate a chrome plating facility. This action also does not compel local agencies to increase the actual level or quality of services that they already provide the public.⁴ For the foregoing reasons, any costs incurred by local agencies to comply with this regulatory action are not reimbursable.⁵

B. Consideration of Alternatives

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective and less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board.

1. Alternative 1 – Shorter Phase Out

Alternative 1 contains more health-protective requirements compared to the Proposed Amendments. All chrome plating facilities would have been required to phase out the use of hexavalent chromium, with an earlier phase out date for functional facilities compared to the Proposed Amendments. Major elements of Alternative 1 are listed below:

- Decorative Chrome Plating
 - Stop using hexavalent chromium for chrome plating within 2 years of the effective date (January 1, 2024) of the amended ATCM.
 - Potential one-year extension for delays associated with transition (construction, permitting, etc.).
- Functional Chrome Plating (Hard and Chromic Acid Anodizing)

² CARB, *Response to Comments on the Draft Environmental Analysis*.

³ *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56

⁴ *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 877.

⁵ *County of Los Angeles v. State of California*, 43 Cal.3d. 46, 58.

- Hard chrome plating facilities: stop using hexavalent chromium for chrome plating by January 1, 2030.
- Chromic acid anodizing facilities: stop using hexavalent chromium for chromic acid anodizing by January 1, 2035.

Because Alternative 1 would have phased out hexavalent chromium from functional facilities at an earlier date than the Proposed Amendments, the total amount of hexavalent chromium emissions reduced would have been greater during the analysis period.

The total direct cost for Alternative 1 over the analysis period was \$1,306,569,0721, compared to the direct cost for the Proposed Amendments of \$590,724,088. The cost effectiveness of Alternative 1 was calculated to be \$8,940,855 per pound of hexavalent chromium reduced, compared to the \$4,842,065 per pound of hexavalent chromium reduced estimated for the Proposed Amendments.

Although Alternative 1 would have achieved greater emissions benefits over the 20-year period of the analysis, staff rejected Alternative 1 because the total direct costs to the chrome plating industry was estimated to be twice that of the Proposed Amendments. In addition, the timelines would likely have been insufficient for technology development for non-toxic or less toxic alternative processes to replace hexavalent chromium in all applications of functional chrome plating.

2. Alternative 2 – No Phase Out

Under Alternative 2, all decorative chrome plating, hard chrome plating, and chromic acid anodizing facilities would have been required to meet an emission limit instead of a phase out, which would have resulted in less emissions benefits when compared to the Proposed Amendments. Alternative 2 provided additional health protection to residents of disadvantaged communities by requiring permanent total enclosures for facilities in those communities. The major elements of this alternative were:

- Decorative Chrome Platers:
 - No phase out of hexavalent chrome.
 - Lower emission limit of 0.00075 mg/amp-hr to be met within two years of the effective date (or by January 1, 2026).
 - All facilities must use add-on controls for hexavalent chrome plating.
 - Implement provisions to mitigate fugitive emissions.
 - Building enclosures.
 - Housekeeping and best management practices.
 - Increased source testing frequency.
 - Permanent total enclosures for facilities in disadvantaged communities.
 - Add-on control requirements for hexavalent chromium containing nonplating tanks.
 - Technology reviews to inform future ATCM amendments.
- Functional Chrome Platers:
 - No phase out of hexavalent chromium.

- Lower emission limit of 0.00075 mg/amp-hr to be met within 2 years of the effective date (or by January 1, 2026).
- Eliminate fume suppressant-only as a control option.
- Implement provisions to mitigate fugitive emissions.
- Building enclosures.
- Housekeeping and best management practices.
- Increased source testing frequency.
- Permanent total enclosures for facilities in disadvantaged communities.
- Add-on control requirements for hexavalent chromium containing nonplating tanks.
- Technology reviews to inform future ATCM amendments.

Compared to the Proposed Amendments, Alternative 2 would have resulted in less hexavalent chromium emission reductions from chrome plating facilities operating in California because of the lack of the hexavalent chromium phase out for all decorative chrome plating, hard chrome plating, and chromic acid anodizing facilities. The permanent total enclosures (PTE) requirement would provide additional health protection to residents in disadvantaged communities as compared to communities where PTE would not be required by reducing fugitive emissions. The total hexavalent chromium reduction for Alternative 2 was lower than the Proposed Amendments.

Alternative 2 would have resulted in a one-time cost for engineering assessment/design, equipment procurement and installation. It would also have resulted in on-going costs primarily related to increased use of electricity, increased demand of insurance and administrative staff, and increased property tax for local governments. It would have increased the production cost of chrome plating and increased sales and jobs in the industries related to the cost items. This would have resulted in less total direct costs on chrome plating business owners compared to the Proposed Amendments. The total direct cost of Alternative 2 was estimated to be \$77,831,001, which would have been a decrease of 87 percent when compared to the total direct costs of the Proposed Amendments. The cost effectiveness of Alternative 2 was estimated to be \$860,974 per pound of hexavalent chromium reduced during the analysis period.

Alternative 2 was estimated to result in cost impacts that were much smaller than the Proposed Amendments. However, the total amount of hexavalent chromium reduced would have been much less than that of the Proposed Amendments. Staff rejected Alternative 2 because this alternative would still allow facilities to use hexavalent chromium, resulting in continued adverse impacts to public health, and would likely have impeded the development of more environmentally friendly technologies; therefore, it is less health protective when compared with the Proposed Amendments.

3. Alternative 3 – Extended Phase Out

Alternative 3 would have allowed continued operations of decorative and functional hexavalent chrome plating facilities until the extended phase out date of January 1, 2039.

Major requirements for the decorative and functional hexavalent chrome plating facilities are as follows:

- Phase out of hexavalent chromium usage on January 1, 2039.
- Technology reviews by 2029 and every five years thereafter to inform future ATCM amendments.
- Lower emission limit of 0.00075 mg/amp-hr to be met by January 1, 2026.
- All facilities must use add-on controls for hexavalent chrome plating.
- Implement provisions to mitigate fugitive emissions.
- Building enclosures.
- Housekeeping and best management practices.
- Increased source testing frequency or parameter monitoring.
- Add-on control requirements for hexavalent chromium containing tanks that are not chrome plating tanks.

Compared to the Proposed Amendments, Alternative 3 would have resulted in less hexavalent chromium emission reductions from decorative chrome plating facilities operating in California because of the phase out date extension. Due to the extension, it was anticipated that decorative chrome plating facilities would have continued to use hexavalent chromium for a longer period. Because operating costs are higher for the trivalent chromium plating process, total direct costs for Alternative 3 would be lower compared to the Proposed Amendments. However, because Alternative 3 significantly delayed emissions reductions from decorative chrome plating facilities and the related health benefits for 13 years, staff rejected this regulatory alternative.

II. Modifications Made to the Original Proposal

A. Modifications Approved at the Board Hearing and Provided for in the 15-Day Comment Periods

After the January 27, 2023, Board Hearing, modifications to the original proposal were made at the Board's direction and to address comments submitted during the 45-Day comment period and at the Board Hearing. CARB staff released the First 15-Day Notice on March 27, 2023 (the "First 15-Day"), which notified the public of additional documents added into the regulatory record and presented additional modifications to the regulatory text. Staff released the Second 15-Day Notice on April 26, 2023 (the "Second 15-Day Notice"). No modifications were made to the regulatory text in the Second 15-Day Notice.

The following is a summary of the changes that were made to the initial proposal in the First 15-Day Notice. Staff proposed modifications to sections 93102.3, 93102.4, 93102.5, 93102.7, 93102.13, and 93102.16, of title 17 of the California Code of Regulations. Please refer to the

First 15-Day Notice and Attachment 1 to the First 15-Day Notice for the necessity of these changes.

1. Section 93102.3 Definitions.

- a) The definition of "Initial Start-Up" was amended to remove "or" and "modified" and add the phrase "that has undergone a Modification" and ", or the first time a Trivalent Chromium Plating Tank begins operation." The word "modified" was removed and replaced with the phrase "that has undergone a Modification." Although this change was listed as a non-substantive modification in the First 15-Day Notice, staff acknowledges that these modifications could be considered substantive.
- b) The definition of "Modification" has been amended to add subsections (D) and (E). Subsection (D) says: "Construction of Building Enclosures required by section 93102.4(d) are not considered Modifications for the purposes of this ATCM." Subsection (E) says: "Changes related to the conversion to alternative technology to Hexavalent Chromium are not considered Modifications for the purposes of this ATCM." Subsection (D) was added to clarify that facilities adding building enclosures for the purposes of complying with the building enclosure requirements do not fall under the definition of "Modification."

2. Section 93102.4 Requirements for Chrome Plating Facilities that Use Hexavalent Chromium.

- a) Section 93102.4(b)(1) was amended to add the phrase "unless they elect to comply with the alternative phase out pathway requirements set forth in subsection (b)(1)(A)." This amendment provides facilities the option of pursuing the alternative phase out pathway, which allows facilities to continue using hexavalent chromium for decorative plating until January 1, 2030, if they implement the building enclosure requirements to reduce fugitive emissions.
- b) Section 93102.4(b)(1)(A) was added, which says "Facilities that elect to continue using Hexavalent Chromium for the purposes of Decorative Chrome Plating after January 1, 2027, shall submit a notification to the District as required by Appendix 1 by January 1, 2025, indicating that they are electing to pursue the alternative phase out pathway. Facilities that elect to comply with the alternative phase out pathway must comply with the Building Enclosure requirements set forth in subsection (d) starting on January 1, 2026, and shall not use any Hexavalent Chromium for the purposes of Decorative Chrome Plating in California after January 1, 2030."

Subsection (b)(1)(A) provides the framework for facilities electing to comply with the alternative phase out pathway. To comply with the alternative phase out pathway, facilities must comply with the building enclosure requirements set forth in section 93102.4(d) starting January 1, 2026, to reduce the release of fugitive emissions from decorative chrome plating facilities in the interim period before the phase out goes into effect. This subsection also sets the phase out date of January 1, 2030, for facilities that comply with the alternative phase out pathway. The additional three years provides more time for facilities to prepare for the transition to alternative technology.

- c) Section 93102.4(b)(2) was amended to add a reference to subsection (b)(1)(A) to specify that the extension is available to facilities complying with the extended phase

out pathway in addition to facilities complying with the January 1, 2027, phase out date. Staff provided this extension to accommodate facilities experiencing delays related to the listed issues that are beyond the owner or operator's control. The District can grant this extension for up to a year (which would make the phase out date January 1, 2031) if they determine that the requirements in the Proposed Amendments are met. These are the same requirements applicable to facilities requesting an extension to the January 1, 2027, phase out date.

- d) Section 93102.4(b)(2)(A) was amended to add the phrase "or by October 1, 2029, for Facilities that elect to comply with the alternative phase out pathway in subsection (b)(1)(A)." The due date of October 1, 2029, for submission of a request for an extension is three months before the phase out date of January 1, 2030. This is consistent with the three-month period that is provided for decorative plating facilities that do not elect to comply with the alternative phase out pathway and must phase out by January 1, 2027 (these facilities must submit the request by October 1, 2026).
- e) Section 93102.4(b)(2)(A)3. was amended to add the phrase "or by January 1, 2030, for Facilities that elect to comply with the alternative phase out pathway pursuant to subsection (b)(1)(A)." This provision provides an extension for facilities that experience delays in receiving the authority to construct permit in time to complete the transition to alternative technology by the applicable phase out date. The January 1, 2027, date in subsection 3 does not apply to facilities that elect to comply with the alternative phase out pathway since they would not need to transition to alternative technology until January 1, 2030.
- f) Section 93102.4(b)(2)(B)3. was amended to add the phrase "or prior to January 1, 2029, for facilities that elect to comply with the alternative phase out pathway pursuant to subsection (b)(1)(A)." Facilities complying with the alternative phase out pathway that request an extension pursuant to subsection (b)(2)(A)3. must include documentation demonstrating that the owner or operator submitted a complete application for an authority to construct by January 1, 2029.
- g) Section 93102.4(b)(2)(D) was amended to add the phrase: ", or January 1, 2030, for facilities that elect to comply with the alternative phase out pathway pursuant to subsection (b)(1)(A)." For facilities that comply with the alternative phase out pathway and request an extension, the District may grant an extension up to January 1, 2031, one year from the January 1, 2030, phase out date. This is consistent with the up to one-year extension available for facilities that do not elect to comply with the alternative phase out pathway.
- h) Section 93102.4(c)(1)(A) was amended to delete the word "facilities" and move the phrase "until January 1, 2026" from the end of the subsection to earlier in the sentence. The following phrase was added "chrome plating tanks used for the purposes of." The requirements in subsection (c)(1) apply to chrome plating tanks that are used for the purposes of functional chrome plating until January 1, 2026, when the requirements of subsection (c)(2) would become effective.
- i) Section 93102.4(c)(1)(B) was amended to add the phrase "chrome plating tanks used for the purpose of" and to delete the phrase "facilities until January 1, 2027, or the date that an extension granted pursuant to section 93102.4(b)(2) expires." This change

simplifies the language of the requirement and accommodates the addition of the alternative phase out pathway and the potential one-year extension.

- j) Section 93102.4(c)(2)(A) was added to say, "Beginning on January 1, 2026, chrome plating tanks that use hexavalent chromium for the purposes of both decorative chrome plating and functional chrome plating shall comply with the emission limitation in subsection (c)(2) instead of complying with the requirements set forth in subsection (c)(1)." If a chrome plating tank is used for both functional and decorative chrome plating purposes, it would have to comply with the emission limitation in subsection (c)(2) after January 1, 2026, instead of continuing to comply with subsection (c)(1).
- k) Section 93102.4(d) was amended to add the following language: "The following requirements apply beginning January 1, 2026, to functional chrome plating operations that use hexavalent chromium and to decorative chrome plating operations that elect to comply via the alternative phase out pathway in subsection (b)(1)(A) for as long as they continue to use hexavalent chromium." Section 93102.4(b)(1)(A) requires decorative chrome plating facilities that choose the alternative phase out pathway to comply with the building enclosure requirements in section 93102.4(d). Building enclosures are required to reduce fugitive emissions prior to the phase out for functional chrome plating facilities and decorative chrome plating facilities that elect to comply with the alternative phase out pathway. These requirements begin January 1, 2026, and continue until the facility ceases to use hexavalent chromium.
- l) Section 93102.4(d)(1) was amended to remove the following language: "beginning January 1, 2026," "Functional," and "Facilities operating." It was also amended to add the phrase "operations that use any." The applicability language now included in subsection (d) accommodates the addition of the alternative phase out pathway and sets forth the applicability of the building enclosure requirements to functional chrome plating facilities beginning January 1, 2026. These requirements apply to chrome plating operations that use any Tier I, Tier II, or Tier III tanks.
- m) Section 93102.4(d)(2) was amended to delete the following language: "Functional," "Facilities operating," "and," and "beginning January 1, 2026." The phrase "operations that use any" was added. As discussed above, the applicability language now included in subsection (d) accommodates the addition of the alternative phase out pathway and sets forth the applicability of the building enclosure requirements to functional chrome plating facilities beginning January 1, 2026. These requirements apply to chrome plating operations that use any Tier II or Tier III tanks.
- n) Section 93102.4(e)(2) was amended to remove the phrase "During Tank Operation," to add the words "Tank" and "all of," and to capitalize the word "Operation." The addition of the word "Tank" and the capitalization of the word "Operation" indicates that this is referring to the defined term "Tank Operation." A modified facility is required to control the emissions of hexavalent chromium pursuant to subsections (e)(2)(A) and (e)(2)(B) from all of the facility's chrome plating tanks, not just the tanks that are undergo modifications.
- o) Section 93102.4(f)(2)(C)2. was amended to add subsection 2., which says "If the Owner or Operator elects to control Tier II Tank(s) per the requirements of section 93102.4(g)(2), the applicable surface area shall be based on the total surface

area of all Tier II and Tier III Tank(s) connected to the same Add-on Air Pollution Control Device.” The surface area calculation for Tier II tanks complying with subsection (f)(2) pursuant to subsection (g)(2) includes the area of all Tier II tank(s) and Tier III tank(s) connected to the same add-on air pollution control device.

3. Section 93102.5 Additional Requirements for Chrome Plating Facilities that Use Hexavalent Chromium.

- a) Section 93102.5(c)(7)(A) was amended to delete “for housekeeping” and to add the phrase “to comply with the housekeeping requirements in subsection (c).” Cleaning equipment and supplies used to comply with the housekeeping requirements set forth in subsection (c) need to be stored in the enclosed storage area since they may be contaminated with hexavalent chromium.
- b) Section 93102.5(d)(4)(B) was amended to add the phrase “at Facilities that use Hexavalent Chromium for the purposes of Functional Chrome Plating and at Facilities that elect to comply with the alternative phase out pathway in section 93102.4(b)(1)(A).” Decorative chrome plating facilities that do not elect to comply with the alternative phase out pathway are not required to incur the costs to construct building enclosures around their buffing, grinding, and polishing operations by January 1, 2026, because they are required to phase out hexavalent chromium the following year. This subsection was also amended to add the phrase “for as long as the facility continues to use hexavalent chromium” because the requirement that buffing, grinding, and polishing operations must be conducted within a building enclosure only applies to facilities for as long as they continue to use hexavalent chromium.

4. Section 93102.13 Reporting Requirements.

- a) Section 93102.13(d)(1) was amended to delete the word “currently,” and to add the phrase “prior to January 1, 2024.” Subsection (d)(1) applies to facilities that are already utilizing trivalent chromium plating prior to January 1, 2024, which staff expects to be the effective date of the Proposed Amendments.

B. Non-Substantial Modifications

Subsequent to the First 15-Day Notice mentioned above, staff identified the following additional non-substantive changes to the Proposed Amendments. The following summary does not include all modifications to correct typographical or grammatical errors, changes in numbering or formatting, nor does it include all the non-substantive revisions. Please refer to the First 15-Day Notice and Attachment 1 to the First 15-Day Notice for an explanation of these changes.

1. Overarching Changes

- a) All instances of the abbreviation “CFR” were changed to “Code of Federal Regulations” for consistency.
- b) All instances of the abbreviation “U.S.C.” were changed to “United States Code” for consistency.

- c) All instances of "This Regulation" were changed to "this ATCM" for consistency. "This ATCM" is used to refer to the Proposed Amendments to the Airborne Toxic Control Measure for Chromium Electroplating and Chromic Acid Anodizing (California Code of Regulations, title 17, sections 93102 through 93102.16).

2. Section 93102.3 Definitions.

- c) The definition of "Breach" was amended to remove a typo that included an extra "that."
- d) The definition of "Hard Chrome Plating" was amended to replace the word "part" with the defined term "Base Material." The term "Base Material" is previously mentioned in this definition, so replacing the word "part" removes any possible ambiguity.
- e) The definition of "Modification" was amended in subsection (C) to correct grammar by changing "exceeding" to "exceed."

3. Section 93102.4 Requirements for Chrome Plating Facilities that Use Hexavalent Chromium.

- a) Section 93102.4(d)(1)(A) was amended by adding an "s" to the word "tank" to improve grammar.
- b) Section 93102.4(d)(2)(B) was amended to move the word "or" and "remains closed" from after the phrase "and that fully covers the opening" to before the phrase "be equipped with a HEPA filter."
- c) Section 93102.4(e)(1) was amended to replace the word "modify" with the phrase "undergo a Modification."
- d) Section 93102.4(e)(1)(B) was amended to replace the word "modified or" with the phrase "that undergo modifications, including being."

4. Section 93102.7 Source Test Requirements and Test Methods.

- a) Section 93102.7(a)(1) was amended to remove the phrase "Functional Chrome Plating" and add the phrase "for the purposes of Functional Chrome Plating" to improve the clarity of this condition. The word "applicable" was deleted and the reference to subsection (c)(2) was added to clarify that the source test must demonstrate compliance with the emission limitation in subsection (c)(2) of section 93102.4.
- b) Section 93102.7(a)(2) was amended to remove the word "modified."

5. Section 93102.13 Reporting Requirements.

- a) Section 93102.13(b)(1) was amended to capitalize "facilities" because it is a defined term.

6. Section 93102.16 Appendix 1 – Submittals to CARB or the District.

- a) The mailing address for documentation submitted to CARB was amended to add "Risk Reduction Branch" so that the mail will be sent to the Chief of the Risk Reduction Branch of the Transportation and Toxics Division.

7. Section 93102.16 Appendix 5 – District Breakdown Rules.

- a) The Table of District breakdown rules in Appendix 5 was updated to accurately reflect the names and numbers of the current District breakdown rules listed. These updates do not impact the District’s breakdown rules themselves and do not alter the requirements of the Proposed Amendments.

8. Subsequent to May 25, 2023, Board Hearing

- a) Subsequent to the May 25, 2023, Board Hearing, a typo was identified and fixed in section 93102.4(d)(1)(B) and (C). “Though” was changed to “through” in both places in subsections (B) and (C) for improved grammar and readability so the respective subsections now end with “...during the passage of vehicles, equipment, or people through the Building Enclosure Opening.”

The above-described modifications constitute non-substantial changes to the regulatory text because they more accurately reflect the numbering of a section and correct spelling and grammatical errors, but do not materially alter the requirements or conditions of the proposed rulemaking action.

III. Summary of Comments and Agency Response

Written comments were received during the 45-Day comment period in response to the November 29, 2022, public hearing notice, and written and oral comments were presented at the January 27, 2023, and May 25, 2023, Board Hearings. Additional written comments were received during the First 15-Day and Second 15-Day comment periods in response to the First 15-Day Notice and the Second 15-Day Notice, respectively. Listed below are the organizations and individuals that provided comments during each comment period:

Table 1. Written Comments Received During the 45-Day Comment Period

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
1	Jim Meyer		12/02/2022	
2	Hunaid Nulwala	Lumishield technologies	12/02/2022	
3	Jim Meyer		12/05/2022	
4-1 to 4-3	Jim Meyer		12/06/2022	
5	Rich Roberson		12/06/2022	
6-1 to 6-10	Art Holman	Sherm's Plating	12/12/2022	6-1
7-1 to 7-4	Eric Soiland		12/12/2022	7-1, 7-2
8-1 to 8-2	Scott Babcock		12/12/2022	
9-1 to 9-3	Rodger Lee		12/13/2022	9-1
10-1 to 10-3	Christopher Moore		12/13/2022	10-1
11-1 to 11-5	William Ganahl	South City Rod and Custom	12/13/2022	
12-1 to 12-5	Jim Meyer		12/13/2022	
13-1 to 13-25	Bryan Leiker	MFASC-MFANC-NASF	12/13/2022	13-1

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
14-1 to 14-6	Jason Wenig	Owner/President - The Creative Workshop	12/13/2022	
15-1 to 15-5	Jim Meyer		12/14/2022	
16-1 to 16-4	Brett Cowan		12/14/2022	
17-1 to 17-7	Eric Svenson Jr	Plating Resources, Inc.	12/19/2022	17-1
18	Jim Meyer		12/19/2022	
19-1 to 19-5	Jim Meyer		12/19/2022	
20	Jim Meyer		12/21/2022	
21-1 to 21-2	Jim Meyer		12/22/2022	
22-1 to 22-3	Jerry Redding	Sherman custom plating	12/22/2022	
23	Jim Meyer		12/28/2022	
24-1 to 24-8	Bobbi Burns		12/29/2022	24-1
25-1 to 25-4	Art Holman	Sherm's Custom Plating	12/30/2022	25-1
26	Jim Meyer		12/30/2022	
27-1 to 27-5	Rich Roberson		01/04/2023	
28	Jim Meyer		01/05/2023	
29-1 to 29-3	Kelly Wiley	Sherm's Custom Plating	01/05/2023	
30	Jim Meyer		01/06/2023	
31-1 to 31-2	John Romero	West Coast Chrome	01/07/2023	
32	Jim Meyer		01/09/2023	
33	Jim Meyer		01/09/2023	
34-1 to 34-5	Thomas Mulhall	Bay Area Shop Solutions	01/09/2023	
35-1 to 35-4	Zain Yahya		01/11/2023	35-1
36-1 to 36-4	Aaron Plechaty		01/12/2023	36-1
37	Steve Weeks		01/12/2023	
38-1 to 38-2	Matthew Pankow	Plating International Inc.	01/13/2023	
39-1 to 39-2	Jim Meyer		01/13/2023	
40-1 to 40-10	James Goehring	Manager	01/14/2023	40-1
41-1 to 41-3	Jim Meyer		01/15/2023	
42-1 to 42-2	Jim Meyer		01/15/2023	
43	Jim Meyer		01/15/2023	
44-1 to 44-3	Kyle Cassano		01/15/2023	
45	Luke Kidd		01/16/2023	
46-1 to 46-5	Cathy Ream	Teikuro Corporation	01/16/2023	
47	Matt Theobald		01/16/2023	47-1
48-1 to 48-3	Albert Ybarra Jr.	Sherms Custom Plating	01/16/2023	
49-1 to 49-12	Jerry Desmond	Desmond & Desmond LLC	01/16/2023	49-1
50	Carlo Spartano	Complete Coach Works	01/16/2023	
51-1 to 51-3	Cathy Atterman		01/16/2023	
52	Janice Stewart		01/16/2023	
53	Angelica Vargas		01/16/2023	

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
54-1 to 54-2	David Martinez		01/16/2023	
55	Randall Eldridge	General Contracting	01/16/2023	
56	Chris Scarano		01/16/2023	
57	Jim Meyer		01/17/2023	
58	Rebecca Overmyer-Velazquez	Clean Air Coalition of North Whittier	01/17/2023	
59-1 to 59-5	James Simonelli	California Metals Coalition	01/17/2023	59-1, 59-2
60-1 to 60-5	Evette Holman		01/16/2023	
61	James Pessy	Art Deco Decor Inc	01/17/2023	
62-1 to 62-6	Carl Troncale		01/17/2023	
63-1 to 63-5	Ray Lucas	MFANC	01/17/2023	
64-1 to 64-2	Albert Ybarra Sr.	Sherms Custom Plating	01/17/2023	
65	Dustin Berry	Teikuro Corp.	01/17/2023	
66-1 to 66-5	Cynthia Babich	Del Amo Action Committee	01/17/2023	
67	Jim Meyer		01/17/2023	
106	Melissa Lopez	ROYAL CUSTOM DESIGNS	01/17/2023	
69	Jim Meyer		01/17/2023	
70-1 to 70-3	Jimena Diaz Leiva	Center for Environmental Health	01/17/2023	
71-1 to 71-4	Anna Byrd		01/17/2023	
72	Wesley Turnbow	EME, Inc.	01/17/2023	
73	Jim Meyer		01/17/2023	
74-1 to 74-3	Jim Meyer		01/17/2023	
75	Jim Meyer		01/17/2023	
76-1 to 76-3	Mark Hyman	Alliance Finishing & Mfg	01/17/2023	
77	Jim Meyer		01/17/2023	
78-1 to 78-2	Michael Lanes		01/17/2023	78-1
79-1 to 79-6	Brad Kerr		01/17/2023	79-1
80-1 to 80-4	Ed Appleton		01/17/2023	80-1
81-1 to 81-2	Jane Williams	California Communities Against Toxics	01/17/2023	

Table 2. Written and Oral Comments Presented at the First Board Hearing on January 27, 2023

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
82-1 to 82-5	Florence Gharibian	Del Amo Action Committee	01/26/2023	
83	Charles Lozier		01/26/2023	

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
84-1 to 84-2	Scott Henningsen	Henningsen Machine Shop	01/26/2023	84-1
85-1 to 85-12	Jeff Hannapel		01/27/2023	85-1
86	Art Holman		01/27/2023	
87	Bryan Leiker		01/27/2023	
88	Jim Meyer		01/27/2023	
89-1 to 89-2	Keaton Curran	MacDermid Enthone - Global Chemical Supp	01/27/2023	
90-1 to 90-3	Brett Troncale	Cal-Tron Plating Inc.	01/27/2023	
91-1 to 91-3	Clayton James	King Industrial Hard Chrome	01/27/2023	
92	Caroline O		01/27/2023	
93	Wesley Turnbow		01/27/2023	
94	Jaime Lopez	University of Southern California	01/27/2023	
95-1 to 95-3	Amy Kyle		01/27/2023	
96	Anthony Rendon		01/27/2023	
97-1 to 97-4	Art Holman	Sherm's Plating	01/27/2023	97-1
98-1 to 98-4	Bryan Leiker	K&L Anodizing/MFASC	01/27/2023	
99-1 to 99-2	Jim Newton	Aircraft X-Ray Laboratories	01/27/2023	99-1
100-1 to 100-2	Cheryl Meyer	West Long Beach Aviation Repair Solutions	01/27/2023	
101-1 to 101-5	Frank Grana	California Electroplating	01/27/2023	101-1
102-1 to 102-2	Patrick Patterson	Pro-Chem/PAVCO	01/27/2023	
103-1 to 103-2	Maria E. Granadino	Aircraft X-Ray Laboratories	01/27/2023	
104-1 to 104-3	Jim Meyer	Aviation Repair Solutions	01/27/2023	
105-1 to 105-3	Gary Wannlund	MFASC	01/27/2023	
106-1 to 106-2	Dane McCuen	MFANC	01/27/2023	
107-1 to 107-5	Jerry Desmond	Metal Finishing Associates	01/27/2023	
108	Albert Ybarra	Sherm's Plating	01/27/2023	
109-1 to 109-2	Ricardo Osorio	EME Inc.	01/27/2023	
110-1 to 110-3	Jessie Urias	EME Inc.	01/27/2023	
111	Salvador Romero	EME Inc.	01/27/2023	
112-1 to 112-2	Jessie Urias Jr.	EME Inc.	01/27/2023	
113-1 to 113-2	Samantha Torres	EME Inc.	01/27/2023	
114-1 to 114-3	Ed Appleton	Metal Finishing Marketers Inc.	01/27/2023	
115-1 to 115-6	Bobbi Burns	MFANC/Global Plating Inc.	01/27/2023	115-1
116-1 to 116-3	Sylvia Rodriguez	MFANC	01/27/2023	
117	Karen Sigaran	EME Inc.	01/27/2023	
118-1 to 118-3	Jose A. Sigaran	EME Inc.	01/27/2023	
119-1 to 119-2	Maritza Batres	EME Inc.	01/27/2023	
120-1 to 120-3	Ken Valine	Metal Finishing Association	01/27/2023	
121	Frank Aguilar	MFANC/Chemeon	01/27/2023	

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
122-1 to 122-2	Terry McGuinness	MFANC	01/27/2023	
123-1 to 123-2	Fernando Roaro	EME Inc.	01/27/2023	
124	James Perez	Metal Finishing Association	01/27/2023	
125-1 to 125-2	Kurt Enderle	Aircraft X-Ray Laboratories	01/27/2023	
126-1 to 126-6	Matt McQuone	MFANC/CEP	01/27/2023	126-1
127-1 to 127-2	Justin Guzman	Aircraft X-Ray Laboratories	01/27/2023	
128-1 to 128-3	Jeff Hannapel	National Association for Surface Finishing	01/27/2023	
129	Moses Huerta		01/27/2023	
130-1 to 130-2	Maribel Barajas	AAA Plating	01/27/2023	
131-1 to 131-3	Olivia Meza	AAA Plating	01/27/2023	
132-1 to 132-2	Rolando Bacanal	AAA Plating	01/27/2023	
133	Estela Pineda	AAA Plating	01/27/2023	
134-1 to 134-2	Jerry Wahlin	MFASC	01/27/2023	
135	Rodrigo Guzman	AAA Plating	01/27/2023	
136-1 to 136-4	David Vianello	LM Chrome Corporation	01/27/2023	
137-1 to 137-3	Wesley Turnbow	EME Inc./MFASC	01/27/2023	
138-1 to 138-2	Vincent Noonan	Metal Finishers Association of CA	01/27/2023	
139-1 to 139-2	Ingrid Rivera	EME Inc.	01/27/2023	
140	Maria Hernandez	AAA Plating	01/27/2023	
141	Angelica Cardenas	AAA Plating	01/27/2023	
142-1 to 142-2	Francisca Ballin	AAA Plating	01/27/2023	
143-1 to 143-2	Kashiram Patel	General Brite Plating	01/27/2023	
144-1 to 144-3	Dilip Patel	General Plating Co.	01/27/2023	
145	Jose Ochoa	Aircraft X-Ray Laboratories	01/27/2023	
146-1 to 146-4	Misael Serrano	Aircraft X-Ray Laboratories	01/27/2023	
147-1 to 147-2	Juan M. Perez	Aircraft X-Ray Laboratories	01/27/2023	
148-1 to 148-4	Sam Bell	Metal Surfaces Inc./MFASC	01/27/2023	
149-1 to 149-3	Charles Bell	Metal Surfaces Inc.	01/27/2023	
150-1 to 150-2	Irma Munoz	Aircraft X-Ray Laboratories	01/27/2023	
151-1 to 151-2	Cathy Ream	Teikuro Corporation	01/27/2023	
152-1 to 152-3	LaVaughn Daniel	Danco Metal Surfacing	01/27/2023	
153-1 to 153-2	Darren Thompson	AAA Plating	01/27/2023	
154-1 to 154-2	Rafael Hernandez Jr.	Aircraft X-Ray Laboratories	01/27/2023	
155-1 to 155-4	Dana Schlumpberger	K&L Anodizing	01/27/2023	
156-1 to 156-3	Alan Olick	General Brite Plating	01/27/2023	
157-1 to 157-2	Francisco Romano	Aircraft X-Ray Laboratories	01/27/2023	
158	Mark Hyman	Alliance Finishing	01/27/2023	
159-1 to 159-3	Brad Kerr	Supplier to MF Industry	01/27/2023	

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
160-1 to 160-2	Jane Williams	California Communities Against Toxics	01/27/2023	
161-1 to 161-2	Brian Ward	MFA/AAA Plating	01/27/2023	
162	Sonia De Leon	Paramount elected official	01/27/2023	
163	Jose De Leon		01/27/2023	
164	Caroline Orija		01/27/2023	
165	Christopher Chavez	Coalition for Clean Air	01/27/2023	
166	Florence Gharibian	Del Amo Action Committee	01/27/2023	
167	Robina Suwol	California Safe Schools Coalition	01/27/2023	
168-1 to 168-2	Keshav Kumar	Plateronics Processing	01/27/2023	
169	Gabriela Ballestros	Assemblyman Rendon	01/27/2023	
170	Katherine Butler	L.A. County Supervisor Hanh	01/27/2023	
171	Geoffrey Blake		01/27/2023	
172-1 to 172-2	Yvonne Martinez Watson		01/27/2023	
173	Christine Wolfe	CA Council for Environmental and Economic Balance	01/27/2023	
174-1 to 174-5	James Goehring		01/27/2023	
175	Dean Talley	California Manufacturers and Technology Association	01/27/2023	
176-1 to 176-4	Bill Lamarr	California Alliance of Small Business Association	01/27/2023	
177	Fe Koons		01/27/2023	

Table 3. Written Comments Received During the First 15-Day Comment Period

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
178	Jim Meyer		03/29/2023	
179	Jim Meyer		03/29/2023	
180	Jim Meyer		03/30/2023	
181	Jim Meyer		03/31/2023	
182	Jim Meyer		04/03/2023	
183	Jim Meyer		04/03/2023	
184	Jim Meyer		04/04/2023	
185	Jim Meyer		04/06/2023	
186-1 to 186-2	Bobbi Burns	Global Plating Inc	04/07/2023	
187	Art Holman	Sherm's Custom Plating	04/10/2023	
188	Terence McGuinness		04/10/2023	188-1
189	Aaron Plechaty		04/10/2023	189-1

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
190	Tracey Coss		04/10/2023	190-1
191-1 to 191-3	Jim Meyer		04/10/2023	
192	Steve Oliveira		04/10/2023	192-1
193	Jim Meyer		04/11/2023	
194	Neil Hammel	Ventura County APCD	04/11/2023	
195-1 to 195-7	Jerry Desmond	MFASC-MFANC-NASF	04/11/2023	
196-1 to 196-6	James Simonelli		04/11/2023	196-1, 196-2
197-1 to 197-11	Charles Pomeroy	Stiles Pomeroy LLP	04/11/2023	197-1 to 197-7
198	Jerry Desmond	MFASC-MFANC-NASF	04/11/2023	
199	James Goehring	Manager	04/11/2023	

Table 4. Written Comments Received During the Second 15-Day Comment Period

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
200	Ted Ventresca	CHEMEON Surface Technology / MFACA	04/26/2023	
201	Jim Meyer		04/26/2023	
202	Jim Meyer		04/27/2023	202-1
203	Jim Meyer		04/28/2023	
204	Jim Meyer		04/29/2023	
205	Jim Meyer		04/29/2023	
206	Jim Meyer		05/05/2023	
207	Jim Meyer		05/07/2023	
208	Art Holman		05/09/2023	
209	Bobbi Burns	MFANC	05/09/2023	
210	Jim Meyer		05/09/2023	
211-1 to 211-4	Charles Pomeroy	MFACA	05/10/2023	211-1 to 211-4
212	Tracey Coss		05/10/2023	212-1
213-1 to 213-3	Jerry Desmond	MFANC-MFASC-NASF	05/10/2023	213-1
214	James Meyer		05/11/2023	
215	Sylvia Rodriguez	MFANC	05/11/2023	

Table 5. Written and Oral Comments Presented at the Second Board Hearing on May 25, 2023

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
216	Alan Olick	General Brite	05/25/2023	
217-1 to 217-2	Carmen Campbell		05/25/2023	
218-1 to 218-2	Cynthia Babich		05/25/2023	
219-1 to 219-2	Bill Felts	MJB Chrome Plating	05/25/2023	
220-1 to 220-5	Yvonne Watson		05/25/2023	
221-1 to 221-7	Jesse N Marquez	Coalition For A Safe Environment	05/25/2023	
222	Maria Liu	California Assembly Speaker Anthony Rendon	05/25/2023	
223	Alan Olick	MFASC Metal Finishers	05/25/2023	
224	Bill Felts	MJB Chrome Plating	05/25/2023	
225-1 to 225-3	Bryan Leiker	MFASC	05/25/2023	
226-1 to 226-5	Jerry Desmond	MFASC & MFANC	05/25/2023	
227-1 to 227-2	Jim Meyer	Aviation Repair Solutions	05/25/2023	
228-1 to 228-3	Bobbi Burns	MFANC	05/25/2023	
229-1 to 229-2	Sylvia Rodriguez	Metal Finishers of California & AMEX Plating, Inc.	05/25/2023	
230-1 to 230-5	Art Holman	Sherm's Plating	05/25/2023	
231	Albert Ybarra	Sherm's Plating	05/25/2023	
232-1 to 232-2	Brian Ward	MFACA	05/25/2023	
233-1 to 233-2	Jeff Hannapel	National Association for Surface Finishing	05/25/2023	
234-1 to 234-4	Justin Guzman	Aircraft X-Ray	05/25/2023	
235-1 to 235-2	Regina Hsu	Earthjustice	05/25/2023	
236-1 to 236-3	Ed Appleton	Metal Finishing Marketers	05/25/2023	
237-1 to 237-4	Sam Bell	Metal Surfaces	05/25/2023	
238	Moses Huerta		05/25/2023	
239-1 to 239-2	Chris Chavez	Coalition for Clean Air	05/25/2023	
240	Felipe Aguirre	Comite Pro Uno	05/25/2023	
241-1 to 241-2	Will Barrett	American Lung Association	05/25/2023	
242-1 to 242-2	Cynthia Pinto-Cabrera	Central Valley Air Quality Coalition	05/25/2023	
243-1 to 243-3	Yvonne Watson	Sierra Club	05/25/2023	
244-1 to 244-2	Jane Williams	California Communities Against Toxics	05/25/2023	
245	Dilip Patel	General Plating Company	05/25/2023	
246-1 to 246-3	Bill LaMarr	CA Alliance of Small Business Owners	05/25/2023	
247-1 to 247-2	Teresa Bui	Pacific Environment	05/25/2023	
248	Kathleen Van Osten	United Airlines	05/25/2023	

Comment Number	Commenter	Association	Date Comment was Received/ Added to Database	Environmental Analysis Response to Comment Number
249-1 to 249-2	Veronica Padilla Campos	Pacoima Beautiful	05/25/2023	
250	Kashiram Patel	General Plating Company	05/25/2023	
251-1 to 251-7	Jesse Marquez	Coalition for a Safe Environment	05/25/2023	
252-1 to 252-2	Bill Magavern	Coalition for Clean Air	05/25/2023	
253-1 to 253-2	Michael Hayden	Lincoln Heights Community Coalition	05/25/2023	
254	Tracy Coss	Metal Finishers Association	05/25/2023	
255-1 to 255-3	Robina Suwol	California Safe Schools	05/25/2023	
256-1 to 256-2	Rebecca Overmyer-Velazquez	Clean Air Coalition of North Whittier & Avocado Heights	05/25/2023	
257-1 to 257-4	Paul Pereira	Coalition for a Safe Environment	05/25/2023	

A summary of comments on the Proposed Amendments, as well as responses, are categorized and provided below. Comment letters received during the public review periods can be found in the Appendix A to this FSOR and are posted on the [Rulemaking 2023 Chrome Plating ATCM](#) website.

A. Master Responses

Master Response 1 – Data

CARB staff analyzed the factors in Health and Safety Code section 39665 in drafting the Proposed Amendments, including available data on emissions and health risks, as well as availability, technological feasibility, costs, suitability, and relative efficacy of less hazardous substitute compounds. CARB staff reviewed data from a variety of sources to ensure the Proposed Amendments were drafted considering the best data available to staff. In the ISOR, which was posted for public review and comment on November 29, 2022, CARB staff identified the data that were used during the consideration of this rulemaking. The science that underpins staff's analysis is well established, as is the toxicity of hexavalent chromium. Hexavalent chromium is a carcinogen for which no safe level of exposure has been identified (see Master Response 2). Because of this, any amount of exposure is considered a threat to human health.

The health risk assessment (HRA) demonstrates the potential health impacts that could result from exposure to hexavalent chromium emitted by chrome plating facilities of various types and sizes. CARB staff used the HRA methodology based on the *Air Toxics Hot Spots Program – Risk Assessment Guidelines* by OEHHA (2015). These guidelines have gone through a robust public and scientific peer review process. CARB staff used this methodology to estimate the potential cancer risks to residents and off-site workers based on exposure to hexavalent chromium from chrome plating operations. CARB staff used the recommended inputs described in the methodology, which includes a 30-year exposure duration. CARB staff used the recommended air dispersion model (AERMOD), and three generic facility configurations were used to represent chrome plating facilities: (1) decorative platers that use only fume suppressants, (2) both decorative platers and small functional platers that use add-on controls, and (3) large functional platers that use add-on controls. The modeling results indicate significant potential residential and off-site worker cancer risks near or adjacent the emission sources. For decorative platers, Tables F.13(a) and F.13(b) in the HRA show that potential individual resident cancer risks range from less than one chance per million to approximately nine chances per million at the nearest receptor. For small and large functional platers, Tables F.14(a) and F.14(b) show that potential individual resident cancer risks range from less than one chance per million to approximately 213 chances per million at the nearest receptor.

Master Response 2 – Zero Emission Level

Hexavalent chromium is a toxic air contaminant that has the potential to cause cancer with no associated threshold for cancer initiation. This means there is no level of emissions below which exposure to hexavalent chromium would be considered safe. As such, any amount of exposure is considered a threat to human health. In addition, hexavalent chromium has non-cancer health effects that include respiratory irritation, severe nasal and skin ulcerations and lesions, perforation in the nasal septum, liver and kidney failure, and birth defects.

CARB's role is to reduce the health impact of pollutants and toxins in the air. Health and Safety Code section 39666(c) specifies that, for toxic air contaminants for which the state board has not specified a threshold exposure level pursuant to section 39662, the ATCM shall be designed, in consideration of the factors specified in subdivision (b) of section 39665, to reduce emissions to the lowest level achievable through application of best available

control technology or a more effective control method, unless the state board or a district board determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health. Due to the high toxicity level of hexavalent chromium, the health impacts of exposure to hexavalent chromium, the proximity of chrome plating facilities to sensitive receptors and disadvantaged communities, and following an evaluation of air monitoring data, the Board determined in Resolution 23-16 that, based on an assessment of risk, it is necessary to reduce emissions of hexavalent chromium from the chrome plating industry to zero to prevent an endangerment of public health.

In September 2020, CARB staff were given direction by the Board in Resolution 20-25 on the California Air Toxics Program Update, to develop appropriate proposed steps to expeditiously transition away from hexavalent chromium use in chrome plating and chromic acid anodizing operations to less-toxic alternatives such as trivalent chromium. Additionally, in Assembly Bill (AB) 211 (Chapter 574, Statutes of 2022), the Legislature stated their intent to make \$10 million of funding available to assist with the *necessary* transition away from the use of hexavalent chromium, contingent upon the Board's adoption of an air emission rule to fully eliminate hexavalent chromium at all chrome plating facilities statewide. The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative. As such, the Proposed Amendments were designed to eliminate emissions of hexavalent chromium from chrome plating operations.

Further, a less toxic alternative technology is available for decorative chrome plating and is under development for functional chrome plating (see Master Response 6). CARB has phased out chemicals pursuant to its authority to regulate toxic air contaminants under Health and Safety Code section 39666, including the recent phase out of perchloroethylene in dry cleaning operations and certain chlorinated compounds used in automotive maintenance and repair operations.

Master Response 3 – Percentage of Statewide Emissions

Although the emissions from hexavalent chromium plating facilities represent a small percentage of the total hexavalent chromium emissions in the State, many chrome plating facilities are located in close proximity to homes and sensitive receptors, such as schools and daycare facilities, and within disadvantaged communities. Hexavalent chromium is the second most carcinogenic toxin on the state's list of toxic air contaminants. The Proposed Amendments are critical due to this combination of extreme toxicity and close proximity to members of the public. Since a less toxic alternative technology is available for decorative chrome plating and is under development for functional chrome plating, CARB staff is proposing to eliminate the use of hexavalent chromium by the chrome plating industry in order to protect public health.

Health and Safety Code section 39666 requires CARB to adopt control measures to reduce emissions of TACs to protect public health. When adopting or amending ATCMs, if no safe threshold exposure level is identified for the TAC, the ATCM must reduce emissions to the lowest level achievable level through the application of best available control technology (BACT) or a more effective control method unless CARB determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health. Due to the high toxicity level of hexavalent chromium, the

health impacts of exposure to hexavalent chromium, the proximity of chrome plating facilities to sensitive receptors and disadvantaged communities, and following evaluation of air monitoring data, the Board determined in Resolution 23-16 that, based on an assessment of risk, it is necessary to reduce emissions of hexavalent chromium from the chrome plating industry to zero to prevent an endangerment of public health.

CARB staff will continue to investigate other sources of hexavalent chromium impacting communities in developing strategies to reduce health impacts caused by emissions of this TAC.

Master Response 4 – Timing

The Proposed Amendments balance industry's concerns with public health by ensuring emission reductions while allowing sufficient time for industry to transition to alternative technologies. The Proposed Amendments provide additional time for facilities to convert to alternative technology compared to staff's initial proposal. The initial Proposed Draft Regulation Language, which staff posted in July 2021, proposed to phase out hexavalent chromium in decorative chrome plating on July 1, 2024, hard chrome plating on July 1, 2028, and chromic acid anodizing on July 1, 2033. In response to industry concerns, staff postponed the phase out for decorative chrome plating facilities to January 1, 2027, and the phase out for functional chrome plating to January 1, 2039.

In response to industry comments and Board direction at the January 27, 2023, Board Hearing, staff released the First 15-Day Notice, which added an alternative phase out pathway for decorative chrome plating facilities. The alternative phase out pathway provides an additional three years prior to the phase out for decorative facilities that implement building enclosure requirements to reduce fugitive emissions in the interim. Additionally, the Proposed Amendments allow Districts to grant an extension of up to one year for decorative facilities that need additional time to complete the transition for reasons that are beyond the owner or operator's control. This extension applies to decorative facilities that comply with the 2027 phase out date as well as facilities that follow the alternative phase out pathway. Many of CARB's regulations encourage the development of technology to achieve emissions reductions.

Master Response 5 – Technology Reviews

In response to industry concerns regarding the availability of alternatives to replace hexavalent chromium in all applications of functional chrome plating, the Proposed Amendments include a requirement that CARB complete two technology reviews that evaluate the status and suitability of replacements for hexavalent chromium in functional chrome plating applications. CARB must complete the first technology review by January 1, 2032, and the second technology review by January 1, 2036, prior to the phase out on January 1, 2039. During this formal review process, staff will assess the development of technologies that can replace hexavalent chromium in hard chrome plating and chromic acid anodizing, as well as health impact data to determine if adjustments through additional amendments should be recommended. The technology reviews will include an evaluation of the availability of alternative technology for aerospace and defense applications as well as other applications. Community representatives, environmental justice advocates, academia, chrome plating facility owners and operators, and other stakeholders will be invited to participate in the technology review process.

Master Response 6 – Alternative Technology

Trivalent chromium is a currently available alternative to hexavalent chromium in decorative chrome plating. CARB staff identified several decorative chrome plating facilities that are already successfully using trivalent chromium and are aware of four facilities that are currently exploring a transition to trivalent chromium and have applied for grant funding.

CARB staff and the CARB Board recognize that there is a slight difference in the color and finish of trivalent chromium plating that may not be acceptable to a subset of consumers, such as classic car enthusiasts. Additionally, some commenters claim that trivalent chromium does not provide the durable, anti-corrosive properties that hexavalent chromium provides in the same product. Staff requested that industry provide information substantiating this claim but did not receive any information demonstrating that trivalent chromium does not provide comparable durability and anti-corrosion properties. The CARB Board has balanced these concerns with the public health impacts of exposure to this highly toxic air contaminant and believe that the desire for a particular aesthetic is not sufficient justification to continue to expose communities to hexavalent chromium indefinitely.

Although the Proposed Amendments phase out the use of hexavalent chromium in chrome plating operations, they do not prescribe any specific replacement technology. As such, other alternatives besides trivalent chromium could be used to replace hexavalent chromium, including non-hexavalent chromium technologies, which may be developed in the future.

Alternatives to hexavalent chromium in functional chrome plating applications are at various stages of development and availability. Although some replacements are commercially available, they do not yet cover all applications for hard chrome plating and chromic acid anodizing. For example, trivalent chromium is being developed as an alternative to hexavalent chromium for some applications in the hard chrome plating process but is not yet available for all hard plating applications. Many of CARB's regulations rely on the development of technology to achieve emissions reductions. CARB staff is hopeful that the large number of functional plating operations and customers in California will help accelerate the development of suitable alternative technology, which could be used as a replacement to hexavalent chromium worldwide.

Hexavalent chromium is a toxic air contaminant that has the potential to cause cancer with no associated threshold for cancer initiation. This means there is no level of emissions below which exposure to hexavalent chromium would be considered safe. In addition, hexavalent chromium has non-cancer health effects that include respiratory irritation, severe nasal and skin ulcerations and lesions, perforation in the nasal septum, liver and kidney failure, and birth defects. Due to the high toxicity level of hexavalent chromium, the proximity of chrome plating facilities to sensitive receptors and disadvantaged communities, and following evaluation of air monitoring data, the Board determined in Resolution 23-16 that, based on an assessment of risk, it is necessary to reduce emissions of hexavalent chromium from the chrome plating industry to zero to prevent an endangerment of public health.

Master Response 7 – Funding

As part of the implementation process, CARB is working toward providing chrome platers with assistance for an early transition to alternative technologies. In AB 211, the Legislature declared that a transition away from hexavalent chromium plating is "necessary" and stated its intent to enact future legislation that would make \$10 million available to CARB to assist with the transition away from the use of hexavalent chromium, and to make this funding

available upon CARB's adoption of a rule to fully eliminate hexavalent chromium at all decorative and functional chrome plating facilities and chromic acid anodizing facilities statewide. The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative. These funds can be used to provide incentives for small businesses to transition away from hexavalent chromium, grow customer awareness and acceptance of trivalent chromium plating products, and fund demonstration projects that further alternative technologies. Since this money is specifically to be made available upon the Board's adoption of a full phase out of hexavalent chromium in chrome plating to assist chrome platers with transitioning costs, the adoption of the Proposed Amendments is a necessary first step. AB 211 funds for eligible projects are expected to be available until June 2026, with a final expenditure deadline of June 2028. Since this money is conditioned on the Board's adoption of a rule that fully eliminates hexavalent chromium from chrome plating statewide, the adoption of the Proposed Amendments is a necessary first step.

AB 617 (Chapter 136, Statutes of 2017) Community Air Protection (CAP) grants are available to assist with the transition to alternative technologies and are applicable to chrome plating facilities. Grants are available for the conversion of hexavalent chromium plating systems to trivalent chromium. Staff are working on updating the CAP guidelines to help provide funding for facilities who transition by January 1, 2027. Facilities that choose to transition to alternatives after 2027 may still be eligible for funding, but funding will be contingent on availability of grant money. Grant funding is not expected to be made available for the installation of building enclosures or other controls.

Master Response 8 – Economic Impact

The goal of the Proposed Amendments is not to close chrome facilities or move them out of State, but rather to transition decorative and functional chrome plating facilities away from the use of hexavalent chromium. The Proposed Amendments have provided both decorative and functional chrome plating facilities with time to transition to alternative technology, including providing additional time for the development of replacements so that they can continue to provide their services and employ staff (see Master Response 4). That being said, CARB staff recognize that the Proposed Amendments may result in business contractions or relocations.

The analysis of the total economic impact, which includes the direct, indirect, and induced costs and benefits of the Proposed Amendments, is included in the macroeconomic analysis section of the SRIA and updated in the ISOR. Staff used the REMI model to estimate the total economic impact by changing the policy variables based on the direct costs and benefits of the Proposed Amendments. REMI is a structural economic forecasting and policy analysis model that integrates input-output, computable general equilibrium, econometric and economic geography methodologies. The REMI results include both direct and indirect impacts to the California businesses. Staff entered the production cost increase to chrome plating facilities into the REMI model as well as the increased demand in certain industries in the upper supply chain due to the conversion to trivalent chromium, and costs due to implementation of best management practices, building enclosures, or add-on controls, as applicable. The impacts of the Proposed Amendments on statewide employment are presented in SRIA Table 5.2, Table 5.9, Table 5.11, Table 5.13 and later updated in ISOR Table IX.11. The REMI model simulation showed job increases as well as decreases through

the analysis period (2024 through 2043). As shown in the ISOR, staff anticipate small net increases in job growth in 2025 and 2038 due to the increase in final demand in various industries that would aid in the phase out of hexavalent chromium and the conversion to trivalent chromium. Decreases in employment are seen in other years of the analysis period.

As discussed in Section IX.(B) of the ISOR, there are direct costs to chrome plating facilities due to the Proposed Amendments. Potential business impacts and impacts to California's economy are discussed in Sections IX.(E)-(H) of the ISOR. As stated in these Sections, the increase in production costs and potential additional decrease in demand of chrome plated parts in California due to the phase out of hexavalent chromium in the chrome plating industry has the potential to result in a contraction or decrease in chrome plating businesses. Please see Section IX.(H) for a detailed analysis and estimate of facility closures based on four scenarios ranging from no additional decrease in demand to an additional 75 percent decrease in demand. On the other hand, the projected increase in demand for tanks, building enclosures, add-on control systems, source testing, and other requirements of the Proposed Amendments have the potential to result in an increase in growth for businesses in supporting industries.

In short, the Proposed Amendments themselves would not be anticipated to result in significant changes in business elimination within California in relation to the total California economy. The overall jobs and output growth impacts are small relative to the California economy, about 0.04 percent in the years of greatest impact, when the highest additional decrease of demand, 75 percent, is assumed.

Cost analysis and assumptions are detailed in the Standardized Regulatory Impact Assessment (SRIA) and then updated in the ISOR. As stated in the ISOR, the total direct cost (including sales tax) for the 113 chrome plating facilities that use hexavalent chromium and are currently active in the State is \$692 million. This cost is the summation of compliance costs for applicable requirements in the Proposed Amendments (e.g., conversion cost, hazardous waste removal, permit cost, operating cost, building enclosures, and other costs). Direct costs on typical businesses were discussed in two categories: decorative chrome plating facilities and functional chrome plating facilities, which includes hard chrome plating and chromic acid anodizing facilities. The cost evaluation presented in the ISOR represents the scenario where all decorative chrome platers will elect to comply with the original proposal of phasing out hexavalent chromium by January 1, 2027 (see Master Response 4 for discussion of the alternative phase out pathway). In addition, the operating cost in staff's analysis assumed that chrome plating facilities will convert to trivalent chromium, even though the Proposed Amendments do not specifically require conversion to trivalent chromium and allows for use of other alternatives after the phase out. Although facilities may choose to go out of businesses rather than incurring the cost of conversion, in calculating the costs to facilities, staff assumed for purposes of this analysis that all chrome plating facilities in the State would incur the costs of conversion. The macroeconomic impacts assessment, including inputs and assumptions, are described in Section 5 of the SRIA.

Although the trend of increasing production costs has the potential to result in a decrease in the number of businesses in the chrome plating industry, the REMI model cannot directly estimate how many of the 113 facilities identified by CARB will cease business in California. Further, CARB staff cannot predict the number of facilities that would close as a result of the Proposed Amendments since the decision to close a business depends on various factors, including economic, personnel, and personal factors. However, staff's analysis not only

included the employment and output decrease estimated by the REMI model in response to the direct costs of the Proposed Amendments, but also included estimates of employment and output decreases from a sensitivity analysis. The scenarios for the sensitivity analysis are informed by stakeholder concerns that consumers may not accept the alternatives to hexavalent chromium plated products or facilities may choose to leave California.

Based on stakeholder feedback, staff performed a sensitivity analysis depicting a range of assumptions regarding the percentage of chrome plating demand that could be reduced in California. To evaluate the potential economic impacts resulting from various degrees of business closures in response to the Proposed Amendments, the sensitivity analysis includes a range of scenarios where CARB staff assumes 25 percent, 50 percent, and 75 percent decreases of chrome plating demand in California. See Section 5.3.6.3 of the SRIA for a discussion of the sensitivity analysis. The impacts to the chrome plating industry employment are shown in SRIA Table 5.8, Table 5.10, Table 5.12, Table 5.14, and later updated in ISOR Table IX.14.

ISOR Table IX.14 shows the estimated employment loss to chrome plating facilities under the four scenarios analyzed: the main scenario, where there is no additional decrease in final demand for chrome plating beyond what the REMI model estimates would occur as a response to increased prices, and scenarios with an additional 25, 50, and 75 percent decrease in final demand for chrome plating in California. The values in Table IX.14 for decorative facilities reflect the maximum annual job decrease in year 1 to year 15. The values in Table IX.14 for functional facilities reflect the maximum annual job decrease after year 15 minus the minimum annual job decrease in year 1 to year 15, which is likely the maximum employment loss in functional facilities. Under the analysis assuming that no additional decrease in final demand for chrome plating beyond what the REMI model estimates would occur as a response to increased prices, the REMI model estimates a loss of 7 jobs at decorative chrome plating facilities and 196 jobs at functional chrome plating facilities. Under the assumption of a 75 percent decrease in chrome plating demand due to customer acceptance, there would be an estimated loss of 674 jobs at decorative chrome plating facilities and 2,978 jobs at functional chrome plating facilities.

There may be indirect economic impacts as a result of the Proposed Amendments, including increased demand for certain industries and indirect impacts resulting from costs that are directly borne by chrome plating facilities but are then passed on to other parts of the economy. Staff estimated the total economic impacts, which include the direct, indirect, and induced costs and benefits of the Proposed Amendments, in the macroeconomic analysis section of the SRIA. A description of the industries that may indirectly benefit from the Proposed Amendments are described in Table 5.1 of the SRIA. These are industries that would see increased demand either from the conversion to trivalent chromium, best management practices, building enclosures, or add-on controls.

The trend in employment and output changes by major sectors, including the indirect impacts to the other supply chain participants, are included in SRIA Figure 5.1 and Figure 5.2. The manufacturing sector is estimated to have the largest negative impacts on jobs loss in percentage terms, because the chrome plating industry bears most of the direct costs of the Proposed Amendments. The Proposed Amendments are anticipated to increase demand for tanks and replenishment chemistry, and, as a result, the model estimates increased output in the manufacturing sector when chrome plating facilities convert from using hexavalent

chromium in 2025 and 2038. These dates correspond to the year preceding the phase out, when facilities would be undergoing the transition. Please note that, when the SRIA was completed, the Proposed Amendments included a phase out date of 2026 for decorative plating facilities, which was later changed to 2027 or 2030 for facilities that elect to comply with the alternative phase out pathway. The greatest increase in output is approximately 0.01 percent of baseline levels. Like the results for employment, the manufacturing sector is eventually estimated to see decreases in output growth because of the production cost increase that outweighs the diminishing impact of positive final demand.

The services sector is an example of a sector that is indirectly affected. It is estimated to experience the greatest negative employment growth due to the production cost increase of chrome plating. Production cost increases in general will have a negative impact on the economy and decrease employment. For example, car service shops and restaurants may see production cost increases for their use of chrome plated products, whose prices are expected to go up. However, these impacts do not exceed 0.01 percent of the baseline levels. The Proposed Amendments also result in a similar pattern of output impacts in the services sector, which experiences the greatest negative impact among all the major sectors. The production cost increase in the chrome plating industry increases the relative cost of production in the services sector and therefore decreases the output.

Master Response 9 – Truck Traffic

The Proposed Amendments allow chrome plating to continue in California indefinitely using alternative technology and do not require parts to be shipped out of state to be plated. Nevertheless, commenters have indicated that the Proposed Amendments may result in some owners or operators of hexavalent chromium plating facilities relocating their operations outside of California, rather than transitioning to a less toxic alternative such as trivalent chromium. If some owners or operators of chrome plating facilities choose to move outside of California, or if consumers seek plating services from facilities outside of California, the hexavalent chromium plated parts manufactured at these facilities would be shipped into the State, which may result in an increase in transportation across state lines. However, it is not feasible to predict to what extent owners or operators may choose to move facilities out of the state due to the Proposed Amendments or to predict where they would relocate. Such predictions would be speculative, particularly given the influence of various business, market, personnel, and personal considerations involved in the decision to relocate. These considerations may include the cost of shipping parts to out-of-state chrome plating facilities to be plated with hexavalent chromium, cost of land or real estate, presence of skilled labor, client retention, establishing the business in a new market, moving costs, as well as personnel factors such as replacing employees who do not relocate, and personal factors, such as whether the owner or operator is willing to move their own residence. Consequently, without knowing the specific number of owners or operators of chrome plating facilities that will leave the state, CARB staff cannot anticipate the potential mobile emissions associated with any increase in truck traffic and warehouse development that may result after the Proposed Amendments are fully implemented.

Please also see Master Response 1 in the Response to Comments on the Draft EA, which was posted on May 24, 2023.

Master Response 10 – Decorative Before Functional

The Proposed Amendments phase out hexavalent chromium in decorative chrome plating earlier than functional chrome plating because trivalent chromium is a currently available alternative for decorative chrome plating. CARB staff identified several decorative chrome plating facilities that are already successfully using trivalent chromium and are aware of four facilities that are currently exploring a transition to trivalent chromium and have applied for grant funding.

Alternatives to hexavalent chromium in functional chrome plating are at various stages of development and availability. Although some replacements are commercially available, they do not yet cover all applications for hard chrome plating and chromic acid anodizing. For example, trivalent chromium is being developed as an alternative to hexavalent chromium in the hard chrome plating process for some applications, but it is not yet available for all hard plating applications. After alternative processes have been developed that can meet the requirements of functional chrome plating, it may take some time to demonstrate the ability to meet aerospace or U.S. Department of Defense (DOD) performance specifications. For other non-aerospace or DOD requirements, such as agricultural equipment or certain automotive applications, the performance testing may take less time as the performance specifications that need to be met are less rigorous. Therefore, staff have provided 15 years following the effective date of the Proposed Amendments for alternative technologies such as trivalent chromium technology to be developed and tested for functional chrome plating prior to the phase out date.

To continue the use of hexavalent chromium in decorative applications until there is a suitable replacement for it in functional applications would unnecessarily expose members of the public to avoidable health risks since there is a currently available replacement for decorative applications.

Master Response 11 – Emission Inventory

Staff conducted a thorough evaluation of emissions from the chrome plating industry in California and potential health risks that result from exposure to hexavalent chromium emitted by chrome plating facilities. The emission inventory included in Appendix B of the ISOR and corrected in the First 15-Day Notice and Second 15-Day Notice presents a range of potential annual emissions based on the available data at the time of its creation. Notably, the emission inventory does not include fugitive emissions, which are difficult to quantify but are a significant source of concern for communities (see Master Response 12).

The high end of this range (10.15 lbs/year) was calculated in the "Potential to Emit" column using permitted maximum throughput in amp-hours and the 2007 ATCM emission limit (mg/amp-hr). The "2019 Emissions Based on 2007 ATCM Factors" column (2.7 lbs/year) was calculated based on the "2019 Facility Reported Throughput" times the "2007 ATCM Emission Rate Limit," which is the currently effective emission rate applicable under the 2007 ATCM, times the conversion factor (mg to lb). The "Permitted Emissions Based on Source Tested Emission Factors" column (3.99 lbs/year) was calculated based on the "Permitted Annual Throughput" times the "Average Source Tested Emission Rates" times the conversion factor (mg to lb). The "Source Tested Emission Rates" were calculated using the source tests that were available to staff. Because source tests for all facilities were not available and were not provided upon staff's multiple requests to industry, staff averaged the values of the source tests provided for each facility type depending on the type of controls

used (decorative with add-on controls, decorative with fume suppressants, hard with add-on controls, hard with covers, and anodizing). The low end (1.05 lbs/year) was calculated in the "2019 Emissions Based on Source Tested Emission Factors" column using the "2019 Reported Throughput (amp-hrs)" times the "Source Testing Emission Rate (mg/amp-hr)" times the conversion factor. When the values for "Permitted Annual Throughput (amp-hrs)" were not available, staff used the "2019 Facility Reported Throughput (amp-hrs)" to calculate the "Potential to Emit (lbs)," and vice versa.

In response to comments identifying issues with the emission inventory included as Appendix B to the ISOR, the First 15-Day corrected a transcription and sorting error that resulted in incorrect numbers being reflected in Table 1 of Appendix B. The revised table was made available for a 15-day comment period through the First 15-Day. The First 15-Day Notice and modified Appendix B were posted on March 27, 2023, for public review and comment through April 11, 2023. During this comment period, additional errors were identified by commenters with respect to the "Average Source Tested Emissions Rate" data, which impacted the values in the "Permitted Emissions Based on Source Tested Emission Factors" and the "2019 Emissions Based on Source Tested Emission Factors" rows. That error was corrected, and the revised tables were presented in the Second 15-Day Notice, which was released for public comment on April 26, 2023.

The table below shows the values for potential annual emissions prior to the corrections as they appeared in Appendix B to the ISOR, as they appeared in the First 15-Day Notice following corrections to the transcription error, and in the Second 15-Day Notice, after the error in the "Average Source Tested Emission Rate" was corrected. The values in the Second 15-Day Notice are bolded in the table and used in the paragraphs below because they are the corrected values.

	Potential to Emit (lb/year) (Calculated)	2019 Emissions Based on 2007 ATCM Factors (lb/year) (Calculated)	Permitted Emissions Based on Source Tested Emission Factors (lb/year) (Calculated)	2019 Emissions Based on Source Tested Emission Factors (lb/year) (Calculated)
ISOR Appendix B	10.19 ¹	2.55 ¹	5.37 ¹	0.90 ¹
First 15-Day	10.15	2.7	0.95 ²	0.19 ²
Second 15-Day	10.15	2.7	3.99	1.05

¹ The values in ISOR Appendix B were incorrect due to a transcription and sorting error that was corrected in the First 15-Day.

² These values in the First 15-Day were incorrect due to an error in the "Average Source Tested Emission Rate" column, which was used to calculate these values. The Second 15-Day Notice corrected this error.

Some commenters claim that the emission inventory is overestimated since it uses the emission limit from the 2007 ATCM and facilities have decreased emissions beyond this limit. CARB staff appreciate the reductions chrome plating facilities have been able to achieve that go beyond the limit required by the 2007 ATCM, including controls implemented by facilities in South Coast Air Quality Management District's (SCAQMD) jurisdiction to comply with Rule 1469 (see Master Response 15). Although the "Potential to Emit" value (10.15 lbs/year) and the "2019 Emissions Based on 2007 ATCM Emission Factors" (2.7 lbs/year) values were calculated using the 2007 ATCM limit, the "Permitted Emissions Based on Source Tested Emission Factors" (3.99 lbs/year) and "2019 Emissions Based on Source Tested Emission Factors" (1.05 lbs/year) values were based on the source tested emission factors.

Some commenters claim that the emission inventory is overestimated because it is based on maximum allowable permitted throughput. Although the "Potential to Emit" value (10.15 lbs/year) and the "Permitted Emissions Based on Source Tested Emission Factors" value (3.99 lbs/year) were based on permitted throughput levels, the values for "2019 Emissions Based on 2007 ATCM Emission Factors" (2.7 lbs/year) and the "2019 Emissions Based on Source Tested Emission Factors" (1.05 lbs/year) values were calculated based on facilities' 2019 reported throughput values. When the values for "Permitted Annual Throughput (amp-hrs)" were not available, staff used the "2019 Facility Reported Throughput (amp-hrs)" to calculate the "Potential to Emit (lbs)," and visa versa.

Some commenters challenge the values used to calculate the "Source Tested Emission Factor," claiming that CARB staff did not include source tests from all chrome plating facilities. It is worthwhile to note that it is not common for source test data to be available for every facility used to build an emission inventory. The chrome plating industry is a good example of this. Historically, chrome platers have not been required to conduct frequent source tests. Each District has its own requirements for source testing frequency. Because of this, limited source test data is available.

However, CARB staff made efforts to gather the limited data that is available. Beginning with the first public workshop, held in September of 2020, CARB staff have repeatedly asked all stakeholders, including members of industry, to provide data that would help in the development of the Proposed Amendments (see Master Response 13). This included information about actual throughput and source test data. To date, staff have not received any verifiable sources test data from members of industry. Staff has received purported source test results from specific facility owners, but that information was summary in nature, and when staff requested the source test reports that would allow us to verify the values, those reports were not provided. CARB staff also requested source test data from the Districts. In response to that request, CARB staff received verifiable source test data from the Districts for 14 facilities. Since that was the data that was available at the time of staff's analysis, that is what was used in determining the source tested emission factors.

Some commenters point to discrepancies in values from the SRIA as compared to the emission inventory. The SRIA is a point-in-time document, and the information in the SRIA is based on the best information that was available at the time it was written. The SRIA document was released on May 26, 2022, and since then CARB staff have updated the emission inventory based on data received from the Districts, industry, and environmental groups. Further, the SRIA was based on the proposed 2026 phase out date. However, in response to industry concerns, the phase out date for decorative chrome plating was extended to 2027 when staff posted the 45-Day Notice, which occurred after the publication of the SRIA (see Master Response 2). As a result, there are differences in the direct costs, facilities, emission inventory, the phase out date for decorative chrome plating facilities, and other areas when comparing the SRIA to the ISOR and the 15-day notices. In addition, CARB staff added the alternative phase out pathway for decorative platers in the First 15-Day and made corrections to the emission inventory data in Appendix B of the ISOR in the First 15-Day Notice and the Second 15-Day Notice.

Some commenters claim that the emission inventory is not up-to-date, including comments that facilities have gone out of business since the facility list was developed in 2019. Emission inventories are also point-in-time estimates, and it is infeasible to continually update them. However, in late 2021 and 2022, CARB staff reached out to Districts requesting updated

information regarding the emission inventory related to chrome plating facilities that used hexavalent chromium. Based on the Districts' responses, CARB removed numerous facilities that had gone out of business since the initial inventory was developed in 2019. Originally, CARB's inventory had over 140 chrome plating facilities that used hexavalent chromium. Based on the updates received from the Districts in 2022, the facility list was reduced to 113 chrome plating facilities that used hexavalent chromium. Staff believes that the inventory represents facilities that were operating in 2022 based on the data provided by the Districts and industry representatives at that time. While it is possible that facilities ceased operating after CARB updated its emission inventory or that the District or industry did not alert CARB to specific businesses that may have closed, the commenters did not provide information identifying which facilities in CARB's inventory have gone out of business.

In Resolution 23-16, the Board directs the Executive Officer to leverage existing and future monitoring resources, including community-based monitoring, to increase the understanding of emission impacts of hexavalent chromium and other toxic metals around chrome plating facilities and other metal processing operations. It further directs the Executive Officer to explore and prioritize additional funding sources for air monitoring of hexavalent chromium and chrome plating facilities, where appropriate, to ensure that fugitive emissions continue to be reduced through implementation of the Proposed Amendments.

Master Response 12 – Fugitive Emissions

Emissions from chrome plating facilities can be classified into two broad categories: stack emissions and fugitive emissions. Stack emissions exit the building through the vent stack of a control device. Fugitive emissions exit the building through roof vents, window, doors, and other building openings. Although certain combinations of control methods and devices can significantly reduce stack emissions, they cannot eliminate them entirely. In addition, while there are some steps that can be taken to reduce fugitive emissions, those steps are also not sufficient to eliminate them entirely.

As discussed in the ISOR, fugitive emissions are difficult to quantify since there can be many sources from which they are generated (e.g., uncontrolled tanks, spray booths, hexavalent chromium dust escaping building enclosures, etc.). Although data may not be available to determine the exact nature and magnitude of fugitive hexavalent chromium emissions, CARB staff conducted a high-level directional analysis to estimate the potential cancer risks associated with fugitive emissions. The analysis assumes that the hexavalent chromium not captured by emission control equipment associated with plating tanks could be released to the atmosphere as fugitive emissions. The details of this analysis are presented in Appendix F of the ISOR. This analysis showed that cancer risk from fugitive emissions could range from one chance per million to greater than 1,000 chances per million.

The Proposed Amendments adopt similar requirements to SCAQMD's Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations (Rule 1469). These requirements are aimed at reducing fugitive emissions, including housekeeping requirements, best management practices, and building enclosure requirements. However, these requirements do not eliminate fugitive emissions from these facilities, and fugitive emissions continue to pose a risk to human health in nearby communities. The Proposed Amendments will ultimately eliminate fugitive emissions of hexavalent chromium from chrome plating facilities when it is phased out.

Ambient monitoring and sampling at metal finishing facilities in Newport Beach, Paramount, and Long Beach showed elevated levels of hexavalent chromium that were attributed to hexavalent chromium emitting tanks. For example, in the Hexavalent Chromium Air Monitoring Study in the City of Paramount, discussed in Section II of the ISOR, SCAQMD detected elevated levels of hexavalent chromium in the City of Paramount. As a result of this, SCAQMD conducted a screening source test at Anaplex Corporation, a chromic acid anodizing facility located within the City of Paramount, to identify the specific causes of elevated ambient hexavalent chromium levels measured very close to the facility. The emissions above three hexavalent chromium containing tanks within the facility were measured for concentration. The average ambient concentration adjacent to the facility was 14 ng/m³ for the period surrounding the test date, as compared to the measured source concentrations from the facility, which was 232,000 ng/m³, as the average of the three tanks tested. This elevated source concentration at 16,600 times the ambient level was considered a positive identification that the facility was contributing to the nearby elevated ambient concentrations. Additionally, SCAQMD determined that it was likely that several tanks in the facility similar to all three types tested, were all contributing to the nearby elevated ambient concentrations. (SCAQMD, Source Test Report 16-333, Conducted at Anaplex Corporation, Hexavalent Chromium Emissions from Three Types of Process Tanks, December 9, 2016).

As discussed in Section 2.C of the ISOR, the results of CARB's air monitoring study from a hard chrome plating facility with HEPA emission control system in Sacramento showed that high concentrations of hexavalent chromium occurred downwind from the facility and near openings close to the plating area. The maximum monitored concentration near the openings of the plating area was 307 ng/m³ (this reading occurred during a malfunction of the add-on air pollution control device). During this time, the upwind monitor concentration was 32.41 ng/m³ and downwind samples were 15.63 ng/m³. The next highest monitor reading at this location was 0.46 ng/m³. The overall average measurements during this period were estimated to be 27.98 ng/m³ (0.09 ng/m³ if the one high value was omitted). The results as measured downwind of the facility and at the edge of the facility property line control device showed a maximum of 23.15 ng/m³. Only one other monitored concentration was above 1 ng/m³ (measured value of 15.63 ng/m³). The average of all the readings was 3.39 ng/m³.

Master Response 13 – Public Involvement

To ensure an open and transparent rulemaking, CARB staff have engaged in an extensive public process since the development of the Proposed Amendments. On June 8, 2018, CARB staff issued a regulatory notice to inform the public of the start of the rulemaking process to amend the 2007 Chrome Plating ATCM. Since that time, CARB staff conducted seven technical workgroup meetings and two public workshops to solicit stakeholder feedback and discuss regulatory concepts, costs, technology alternatives, emission inventory estimates, health and environmental impacts, compliance, and source testing results. Staff posted information regarding these technical working group meetings and workshops and any associated materials on the Chrome Plating website and distributed notice of these meetings through the Chrome Plating List Serve, which includes over 3,400 recipients. During these workgroup and workshop meetings, staff noted all comments from participants.

In addition, CARB staff conducted numerous meetings and phone calls with members of impacted communities, environmental justice advocates, local air districts, industry stakeholders (including owners and operators of chrome plating facilities, chemical fume

suppressant suppliers, equipment manufacturers (OEMs), and trade associations). CARB staff also had discussions with other state agencies, the U.S. Environmental Protection Agency (U.S. EPA), and other interested parties. CARB staff visited about 30 chrome plating facilities to learn more about their business operations and to better understand potential implementation challenges associated with the Proposed Amendments. A detailed summary of all stakeholder outreach activities is included in Chapter XII and Appendix E of the ISOR. The input provided by all participants and representatives of industry were taken into account, and a variety of alternatives were considered when developing the Proposed Amendments.

CARB engaged with industry, including owners and operators of chrome plating facilities, employees, the U.S. Department of Defense (DOD), and members of the aerospace industry. Owners, operators, and employees of chrome plating facilities expressed their concerns about the phase out of hexavalent chromium and requested that controls, such as those in Rule 1469, be adopted in lieu of a phase out. They also expressed concerns regarding the timing of the phase out and requested that it be extended. Please see Master Response 4 for a discussion of the extensions to the phase out that have been provided in response to industry comments.

Throughout the rulemaking process, beginning prior to the first public workshop, CARB staff repeatedly asked members of industry to provide any and all data that would help in the development of the regulatory requirements. This includes providing source test data. As discussed in Master Response 11, industry was not forthcoming in providing source test data that could be verified.

During the development of the Proposed Amendments, CARB staff engaged the impacted communities and their leaders to ensure that the Proposed Amendments are aligned with communities' needs. The Environmental Justice advocates have expressed their concerns that hexavalent chromium should be phased out sooner due to its high cancer potency with no identified safe level of exposure, especially for decorative chrome plating facilities since trivalent chromium is a currently available less toxic alternative.

The Proposed Amendments balance industry's concerns with public health by ensuring emission reductions while allowing sufficient time for industry to transition to alternative technologies.

Master Response 14 – Protecting Public Health:

CARB staff were given direction by the Board in Resolution 20-25 on the California Air Toxics Program Update, to develop appropriate proposed steps to expeditiously transition away from hexavalent chromium use in chrome plating and chromic acid anodizing operations to less-toxic alternatives such as trivalent chromium. Additionally, in AB 211, the Legislature stated their intent to make \$10 million of funding available "upon the board's adoption of an air emission rule to fully eliminate hexavalent chromium at all decorative and functional chromium plating facilities and chromic acid anodizing facilities *statewide*" (emphasis added). The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative. As such, the Proposed Amendments were designed to reduce the pollution burden on all communities where chrome plating is conducted by eliminating emissions of hexavalent chromium from all chrome plating operations in California.

CARB is responsible for protecting the health of all Californians, including residents in communities and off-site workers, by reducing their exposure to harmful air pollution. Therefore, the Proposed Amendments apply to chrome plating facilities statewide. CARB regulations typically apply to all subject facilities within the state, which is consistent with CARB's role as the lead air pollution regulatory agency in California.

Some commenters request an exception to the phase out if they are located in industrial areas that are not nearby sensitive receptors. CARB declined to adopt such an exception, which would not protect off-site workers, who often spend substantial time in industrial areas. Further, if hexavalent chromium use was allowed for a subset of chrome plating facilities based on geographic location, it is possible that these emissions could impact communities in the future as development happens. Please note that local governments have authority to issue land use and zoning decisions.

Commenters also requested an exception for facilities that are not located in disadvantaged communities. CARB declined to adopt such an exception, which would not protect residents of communities that are not identified as disadvantaged communities. Also, because hexavalent chromium is a multi-pathway pollutant, emissions can deposit onto soil, plants, and waterbodies, causing additional pathways for exposures even for people not residing near the facility (e.g., contaminated crops) or for people who move closer in the future.

Some commenters, including facilities that serve the classic and custom car industry, requested an exception for their operations. This request would allow emissions, including fugitive emissions, to continue to impact communities near chrome plating facilities that fall under the proposed exception by allowing those facilities to continue use of hexavalent chromium (see Master Responses 2 and 12). There are many groups within the chrome plating industry that would like a similar exception to apply to their operations. If we adopted an exception for the classic and custom car sector, other sectors would demand a similar exception for their operations. Furthermore, creating unique exceptions based on geographic regions or the specific sector the facility serves creates significant challenges in enforcing the Proposed Amendments.

Master Response 15 – Rule 1469

CARB staff appreciates the reductions that facilities have achieved through control technologies and compliance with the 2007 ATCM and Rule 1469 (for facilities located in SCAQMD's jurisdiction). However, hexavalent chromium is extremely toxic, and it only takes a small amount to cause serious effects on human health (see Master Responses 2). Although certain combinations of control methods and devices can significantly reduce stack emissions, they cannot eliminate them entirely (see Master Response 12). In addition, while there are some steps that can be taken to reduce fugitive emissions, those steps are also not sufficient to protect public health.

In AB 211, the Legislature declared that a transition away from hexavalent chromium plating is "necessary" and stated its intent to enact future legislation that would make \$10 million available to CARB to assist with the transition away from the use of hexavalent chromium, and to make this funding available upon CARB's adoption of a rule to fully eliminate hexavalent chromium at all decorative and functional chrome plating facilities and chromic acid anodizing facilities statewide. The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent

chromium or an equally health protective alternative. Additionally, throughout the Rule 1469 development process, community members expressed concern over enforceability of Rule 1469 and that the rule did not do enough to reduce public exposure to hexavalent chromium. At the May 2023 CARB Board meeting, Board Member, Gideon Kracov, also pointed out that we are further along with trivalent chrome than we were when Rule 1469 was adopted. Several board members highlighted that, because there is no safe level of exposure, a phase out was necessary (see Master Response 2).

The Proposed Amendments are designed to reduce and eventually eliminate emissions of hexavalent chromium, a highly potent carcinogen, from the chrome plating industry in California. In contrast, Rule 1469 does not include a phase out provision for hexavalent chromium usage. Due to the phase out, the Proposed Amendments result in a 100 percent reduction in hexavalent chromium emissions from the chrome plating industry. Rule 1469 does not prevent all emissions of hexavalent chromium, particularly fugitive emissions, which remain a significant concern in nearby communities. Despite the requirements in the 2007 ATCM and Rule 1469, fugitive emissions continue to be a significant source of concern for communities (see Master Response 12).

The Proposed Amendments require chrome platers to comply with housekeeping requirements, building enclosure requirements, and best management practices, as applicable, which are similar to the requirements of Rule 1469. CARB staff aligned these requirements with the requirements in Rule 1469 so that facilities in SCAQMD's jurisdiction will not have to incur additional expenses to implement these requirements. Because Rule 1469 was effective prior to the Proposed Amendments, staff assumed facilities in SCAQMD's jurisdiction are already complying with Rule 1469's housekeeping requirements, best management practices, and building enclosure requirements in the cost analysis. Staff based the cost analysis on stakeholder input and input from SCAQMD staff, who have been involved throughout the rulemaking process.

B. Comments Received during the 45-Day Comment Period and at the Board Hearing on January 27, 2023

1. Comments in Support of the Proposed Amendments

a) General Support

CARB received broad support from a range of organizations and stakeholders. The following commenters support the objectives and goals of the Proposed Amendments: 2, 58, 66-1, 70-1, 81-1, 82-1, 92, 94, 95-1, 96, 129, 160-2, 162, 163, 164, 165, 167, 169, 170, 172-2, and 177.

Summary of Comment 2 et al.:

These comments encourage the Board to adopt the Proposed Amendments that require decorative and functional plating facilities in California to eliminate hexavalent chromium emissions over time by switching to alternative technology. These commenters note that trivalent chromium is a less toxic alternative to hexavalent chromium in decorative plating applications and can be used without toxic PFAS-based fume suppressants. Commenters state that over half of the chrome plating facilities in California are near a school, church, or neighborhood and recognize that the Proposed Amendments help address the cumulative

environmental burden from toxic air contaminants in these communities. Many commenters are concerned that hexavalent chromium emissions from the plating industry are impacting their health, the health of communities, and the health of employees in the chrome plating industry. These comments note that it is possible for chrome plating employees to find new employment, whereas one's health cannot be replaced. Commenters also ask the Board to commit to early action to switch chromic acid anodizing facilities and hard chrome plating facilities away from hexavalent chromium as soon as feasible alternatives can be identified.

Commenters are supportive of providing the chrome plating industry with financial assistance to facilitate the transition to trivalent chrome and urge CARB to work with the State to secure additional funding to further facilitate the transition. Comments 81-1 and 96 also note that the Legislature approved \$10 million, upon adoption of the Proposed Amendments, to assist with the transition away from the use of hexavalent chromium.

Response 2 et al.:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. Please see Master Response 7. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 94:

I am a resident in Paramount, CA and a doctoral candidate at the University of California focusing on environmental justice issues in Southeast Los Angeles. I hope everyone can acknowledge that there is gross imbalance between those in attendance being paid to advocate for industry and virtually all of the disadvantage residents who live in the more than 100 environmental justice communities in CA who can't be here today. Many vulnerable community members do not have the capacity or awareness to yet fully understand the environmental harms that CARB is trying to protect them from, and they also may not have the luxury of an employer to pay for their attendance today.

Many statements made in support of industry fail to present arguments that indicate they've thought about environmental justice beyond their own self-serving perspectives and individual identifications such as, "I've been working at this company for X number of years", "I like my job" "I'm good at my job", "I'm x years old and still healthy and alive", etc. etc. It is clear from many of the statements today that environmental justice not understood within a larger societal context.

It is also tragic that employees are being paraded today on behalf of industry to downplay the harmful environmental conditions that environmental justice scholars and scientists have identified for decades.

Frontline communities are at the real victims here, and thank you CARB for standing up for those who can't speak for themselves today.

Response 94:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. Please see Master Responses 13 and 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 172-1:

"I support the phase out of hexavalent chromium (VI) and PFAS/PFOA chemicals in the chrome plating industry. I'm not there today, because I am partially immunocompromised. I'm answering that early. I've been on the phone '- I've been on this meeting since 9 o'clock. That's why a lot of people are not at these meetings, because they either have health effects already or they're in a job that doesn't pay for them to attend large – you know, en masse like chrome plating industry did for today's meeting."

Response 172-1:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. Please see Master Response 13. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 173:

"We're supportive of the proposed inclusion of technology reviews to identify feasible alternatives for hard chrome plating and chromic acid anodizing consistent with international approaches to this issue."

Response 173:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities, and the technology reviews' evaluation of alternative technology. Please see Master Response 5. CARB staff made no changes to the Proposed Amendments based on the received comments.

b) Comments in Support of More Stringency

Comments 66-2 and 82-2:

The rule calls for CARB to conduct two technology reviews that evaluate the development of technologies to replace Hexavalent Chromium in Hard Chrome Plating and Chromic Acid Anodizing operations. Discontinuation of chemical fume suppressants must be included in these reviews.

The Del Amo Action Committee recommends the continuation of dialogue with environmental justice organizations, community members and technical experts. A work group is needed to facilitate this dialog. The work done through the Technology Reviews should not result in the extensions of the dates to eliminate the use of Hexavalent Chromium.

Response 66-2 and 82-2:

Please see Master Response 5, which discusses the two technology reviews staff will complete by January 1, 2032, and January 1, 2036. Community representatives, environmental justice organizations, community members, and technical experts will be able to participate in the technology review process, as well as academia, chrome plating facility owners, operators, and employees, and other industry stakeholders. The commenter is welcome to repeat their request that CARB staff consider the discontinuation of chemical

fume suppressants during their participation in the technology reviews. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comments 66-3 and 82-3:

If requirements in a rule cannot be enforced, compliance with those requirements is seriously undermined. Sometimes conditions in a rule that are vague hamper enforcement. An essential step in development of a rule is the evaluation of the rule by the staff that does inspections and enforcement to ensure enforceability. The enforceability of the conditions in the following paragraph in the rule may be difficult to enforce.

All Building Enclosure Openings that are open to the Exterior and on opposite ends of the Building Enclosure from each other shall be equipped with a Protected Opening Method and shall not be simultaneously open except during the passage of vehicles, equipment, or people through the Building Enclosure Opening. All Building Enclosure Openings that directly face any Sensitive Receptor that is located within 1,000 feet, as measured from the property line of the Sensitive Receptor to the Building Enclosure Opening shall be equipped with a Protected Opening Method and remain closed except during the passage of vehicles, equipment, or people.

Would it be necessary for ARB inspectors to observe compliance with these requirements? Does the ARB or the SCAQMD know which facilities will require a Protected Opening Method? Why was 1,000 feet chosen as the distance in the rule? This distance is about three blocks. An Inventory of the facilities to determine those that will have to comply with the Protected Opening requirement might be useful.

Response 66-3 and 82-3:

CARB considered the comments regarding enforceability and included a commitment to work closely with the Districts to track and evaluate enforcement and implementation of the Proposed Amendments in Resolution 23-16, which was adopted by the CARB Board during the May 25, 2023, Board Hearing.

As discussed in the Purpose and Rationale for section 93102.4(d)(1)(c) in Section IV.(A)(5) of the Initial Statement of Reasons (ISOR), the distance of 1,000 feet was chosen to protect nearby sensitive receptors by limiting fugitive emissions of hexavalent chromium that can escape through openings in the building enclosure. As discussed in Section V.(A)(1) of the ISOR, hexavalent chromium emissions from chrome plating operations are localized. Based on staff's modeling analysis of stack emissions from generic chrome plating facilities, the expected ground level concentrations of hexavalent chromium drop quickly moving away from the chrome plating facility.

Additionally, as discussed in the Purpose and Rationale for section 93102.4(d)(1)(C), the distance of 1,000 feet is consistent with the use of the 1,000-foot threshold in the 2007 ATCM as the minimum distance that any new facility must be from the boundary of any area that is zoned for residential or mixed use or any school. The 1,000-foot threshold is also consistent with the requirement applicable to facilities located in SCAQMD's jurisdiction because Rule 1469(d)(6)(B) sets 1,000 feet as the threshold distance below which building enclosure openings facing a sensitive receptor must be closed. SCAQMD identifies facilities that fall within the 1,000-foot threshold. Please see Master Response 15.

CARB staff made no changes to the Proposed Amendments based on the received comments.

Comments 66-4 and 82-4:

“The rule requires: ‘Compliance Assistance Training Course pertaining to chromium plating and chromic acid anodizing on Chrome Plating every two years. On or after October 24, 2023, Environmental compliance and recordkeeping required by this ATCM shall be conducted only by the supervision of persons who completed an ARB Compliance Assistance Training Course on Chrome Plating and who are onsite.’

It may be possible for the ARB to develop an online training course that requires participants to register in order to record their participation. All employees at a Chrome facility should have adequate training; Records of this training must be recorded.”

Response 66-4 and 82-4:

CARB staff understand the need to track completion of the training required by the Proposed Amendments. CARB uses a learning management system for all of its training courses. The learning management system requires registration, records participation, and issues certificates of completion. Staff will run the CARB Chrome Plating Compliance Assistance Training course through this learning management system. In addition, section 93102.13(b) of the Proposed Amendments requires chrome plating facilities to submit ongoing compliance status reports to the District annually, which must include a statement that the owner or operator, or personnel designated by the owner or operator, has completed the environmental compliance training within the last two years according to section 93102.5(b).

Comments 66-5 and 82-5:

“Store, dispose of, recover, or recycle Hexavalent Chromium or Hexavalent Chromium containing wastes generated from the housekeeping activities would almost certainly be regulated as hazardous waste. Hazardous waste generators are required to take several steps to ensure safe handling and disposal of the waste. These include meeting hazardous waste storage and labeling requirements and training requirements. It is possible that the DTSC and ARB requirements could be mutually beneficial.”

Response 66-5 and 82-5:

Facilities are required to comply with all applicable laws for the handling of hazardous wastes, including requirements related to safe handling and disposal of hazardous waste, such as waste contaminated by hexavalent chromium that is generated by the housekeeping requirements in the Proposed Amendments. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 70-2:

Given what is known about the toxicity of hex chrome and concerns surrounding elevated concentrations of hex chrome in environmental justice communities like Paramount, the proposed timeline for the phaseout of the use of hex chrome in functional chrome plating facilities by 2039 is simply too long for residents to continue being exposed.

We strongly suggest that CARB consider adopting the phaseout timeline proposed in Alternative 1 (p. 222, ISOR). CARB’s reasoning for rejecting this alternative timeline cites the

higher costs to chrome plating facilities and the absence of suitable alternatives to hex chrome in functional plating industries. Absent in this cost analysis are the historic and ongoing costs borne by residents exposed to hex chrome pollution from the chromium plating industry. As CARB states,

“Nearly 30 percent of chrome plating facilities have residential receptors located within 100 meters. Approximately 10 percent of chrome plating facilities have receptors located within 20 meters. Many chrome plating facilities are located in disadvantaged communities and other populated areas near sensitive receptors, such as schools” (p.187, ISOR).

The material and symbolic costs of hex chrome pollution borne by these communities include medical expenses incurred to treat health impacts like asthma and lung cancer, the costs of environmental cleanup and monitoring, and the intangible costs in the reduction of quality of life from breathing contaminated air. We urge CARB to also weigh these burdens against the costs to industry in any analysis of the financial impact of proposed phaseout timelines.

We also understand that technological advancements are currently limiting the replacement of hex chrome in functional plating industries. If technology is the limiting factor in implementing an accelerated phaseout, we strongly suggest that CARB include a provision in the Proposed Amendments that states that should a replacement technology become available before the initial technological review in 2032, the agency will revise the timeline for phaseout of the use of hex chrome in functional plating industries.

The CalEnviroScreen 4.0 tool points to high levels of air pollution in Paramount, indicating that it should be considered a “nonattainment area” under Section 172 (a)(2)(c) of the Clean Air Act (CAA). In October of last year, EPA interpreted this section to mean that this section promotes the “expeditious attainment of National Ambient Air Quality Standards to protect human health and the environment.” A high concentration of air pollutants that carry the “hazardous” designation such as hex chrome can further cause EPA to reclassify the area as “severe”, for which the attainment timelines are even more stringent. Whether CalEPA considers Paramount to be “nonattainment” or “severe nonattainment” according to the latest available data, CARB’s phaseout timeline for hex chrome will be out of step with the CAA’s mandate.

Response 70-2:

As discussed in Master Response 6, alternative technology is not currently available to replace hexavalent chromium in all applications of functional chrome plating, including important applications in the military and aerospace sectors. CARB staff rejected Alternative 1 (pg. 222, ISOR) due to timelines for technological development and product testing in the functional chrome plating sectors based on feedback received from DOD, chemicals suppliers, OEMs, and aerospace industry representatives.

As discussed in Master Response 4, staff developed the timelines in the Proposed Amendments to balance public health concerns with the need for additional time to develop alternative technology for functional chrome plating. As an example, for some military and aerospace applications, it could take up to 10 years to demonstrate that an alternative meets performance standards. In addition to timelines for technological development, the high cost

of this alternative, compared with the costs for the Proposed Amendments, was another reason staff rejected Alternative 1.

As discussed in Master Response 5, the Proposed Amendments requires staff to conduct two technology reviews that evaluate the status and suitability of replacements for hexavalent chromium for functional chrome applications by January 1, 2032, and January 1, 2036. During this formal review process, staff will assess the development of technologies that can replace hexavalent chromium in hard chrome plating and chromic acid anodizing, as well as health impact data, to determine if adjustments through additional amendments should be recommended. Community representatives, environmental justice advocates, academia, chrome plating facility owners and operators, and other industry stakeholders will be invited to participate in the technology review process. The Purpose and Rationale for section 93102.4(b)(3)(A) in Section IV.(A)(5) of the ISOR indicates that staff's technology review process will include an evaluation of whether the January 1, 2039, phase out date needs to be adjusted through another amendment (p. 95, ISOR). If a suitable replacement technology is developed such that a transition prior to the January 1, 2039, phase out date would be feasible for functional chrome plating applications, staff can recommend amending the phase out to an earlier date.

The South Coast Air Basin, which contains the city of Paramount, is designated as "extreme" nonattainment for the 2015 Ozone National Ambient Air Quality Standard (NAAQS) by U.S. EPA. U.S. EPA requires areas that do not meet the NAAQS to develop and submit a State Implementation Plan (SIP) for approval. SIPs are a compilation of plans, programs, District rules, state regulations and federal control, which is much broader than one Airborne Toxic Control Measure, such as the Chrome ATCM. California's SIP includes SCAQMD's 2022 Air Quality Management Plan (2022 AQMP), which addresses the requirements for meeting the 2015 Ozone NAAQS. The 2022 AQMP was adopted by SCAQMD on December 2, 2022, and by CARB on January 26, 2023. CARB submitted the 2022 AQMP to U.S. EPA for inclusion in the California SIP on February 22, 2023.

CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 70-3:

While we agree with CARB that short-term mitigation measures such as building enclosures and enhanced best management practices are necessary to reduce fugitive emissions at chrome plating facilities, we believe facilities will not comply with these added measures without consistent monitoring and compliance structures. It should be noted that under CAA Section 505(e), the presence of fugitive emissions mandates that any and all Title V operating permits for hex chrome facilities in Paramount be reopened.

We understand CARB likely does not have the administrative capacity to reopen these permits but maintain that preventative measures to reduce fugitive emissions like those proposed in the ISOR can only be effective if enforcement activities are also carried out. Enforcement and compliance cannot occur without baseline data and we strongly urge CARB to work with the appropriate agencies to collect additional data on hex chrome emissions from functional and decorative chrome plating facilities. The best indicator of compliance is data from before and after implementation of the proposed amendments. Relying on

facilities to self-report opens the door for facilities to stray further from the requirements of the CAA through more lackadaisical data collection and "greenwashing."

Given our success in implementing community-led monitoring in Paramount, we would also encourage CARB to explore ways to further incorporate community participation into monitoring and oversight of compliance. We encourage CARB and all other relevant divisions of CalEPA to use the authority under the Title V Permitting Rule 6 to consider modifying the Title V operating permits of hex chrome plating facilities and bringing affected communities such as Paramount into that process.

Comprehensive and consistent monitoring and an expeditious timeline for phasing out hex chrome emissions will ensure CARB's rulemaking is in alignment with Federal efforts to reduce emissions of air pollutants in disadvantaged communities."

Response 70-3:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities and CARB welcomes community participation in monitoring programs. Please see Master Responses 5 and 12-14.

CARB considered the comments regarding enforceability and included a commitment to work closely with the Districts to track and evaluate enforcement and implementation of the Proposed Amendments in Resolution 23-16, which was adopted by the CARB Board during the May 25, 2023, Board Hearing. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 95-2:

The proposal incorporates the concept of shifting to zero discharge technologies for highly toxic compounds in communities and the concept of transition support for businesses to adapt. These are both important principles that should be adopted here and applied more broadly.

We need greater emphasis at CARB on developing, incentivizing, and implementing zero discharge technologies for highly toxic compounds especially when releases are occurring in communities, beyond this case. I have no doubt that CARB and the districts could accelerate zero discharge technologies. Technologies do not just "develop," but need to be incentivized.

Response 95-2:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. CARB recognizes the need to protect communities from harmful emissions and will continue to investigate strategies to control emissions of toxic air contaminants, including zero discharge technologies.

Please see Master Responses 2, 4-6. The Proposed Amendments balance industry's concerns with public health by ensuring emission reductions while allowing sufficient time for industry to transition to alternative technologies. Many of CARB's regulations, including the Proposed Amendments, rely on the development of technology to achieve emissions reductions. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 95-3:

To reduce cumulative impacts of toxics in communities, we need to reduce a number of sources that may not be the most significant individually, but that collectively create a disproportionate burden of pollution. We cannot continue to consider each source separately.

Response 95-3:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities.

Please see Master Response 3. CARB is looking into other sources of toxic air contaminants, in addition to hexavalent chromium, that are impacting communities and will continue to pursue strategies to reduce emissions to protect public health. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 160-1:

And this is the sad and sorry state of affairs that we are in, and that is that because we do not have rules that require fence-line monitoring at hexavalent chromium facilities, and every time we go out and look at what is actually happening with fugitive emissions at these facilities, we find elevated levels of hexavalent chromium in the air. The problems are not the stack emissions, which the industry wants to talk about as being, you know -- those stack emissions are easy to control. It's the fugitive that are difficult to control.

Response 160-1:

CARB staff share the commenter's concern regarding exposure of communities to fugitive emissions of hexavalent chromium from chrome plating facilities. The Proposed Amendments will reduce fugitive emissions to zero through the phase out of hexavalent chromium in chrome plating operations. In the interim, the Proposed Amendments implement best management practices, housekeeping requirements, and building enclosure requirements aimed at reducing fugitive emissions. Please see Master Response 12.

In Resolution 23-16, the Board directs the Executive Officer to leverage existing and future monitoring resources, including community-based monitoring, to increase the understanding of emission impacts of hexavalent chromium and other toxic metals around chrome plating facilities and other metal processing related operations. It further directs the Executive Officer to explore and prioritize additional funding sources for air monitoring of hexavalent chromium and chrome plating facilities, where appropriate, to ensure that fugitive emissions continue to be reduced through implementation of the Proposed Amendments. CARB staff made no changes to the Proposed Amendments based on the received comments.

2. Comments in Opposition of Proposed Amendments

a) Regulatory Document Issues

The following comments expressed related concerns: 6-9, 7-4, 12-1, 16-3, 24-7, 40-2, 44-2, 63-5, 64-2, 74-3, and 79-6.

Summary of Comment 6-9 et al.:

These comments state that the Proposed Amendments should be based on science and data. Commenters state that CARB has not provided sufficient data or documentation proving that hexavalent chromium emitted from chromic acid anodizing and chrome plating facilities at current regulation levels is dangerous to the environment and communities. Commenters also note that CARB has not provided sufficient data showing that hexavalent chromium emission levels from chrome plating facilities justify the phase out of hexavalent chromium from chrome plating operations. These commenters state that CARB has been influenced by the environmental justice community to phase out hexavalent chromium from chrome plating operations. As an example, comment 6-9 states "when I hear someone who sits on The CARB board say, "we have to give them something" meaning ban decorative platers to keep the EJ community appeased for the time being is just not how our rulemaking process should be conducted."

Response 6-9 et al.:

Please refer to Master Responses 1, 2, 4, and 13. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 41-1:

The opening paragraph of the Standardized Regulatory Impact Assessment (SRIA) sets forth the purpose for the rulemaking. It is artfully crafted but misleads the CARB board and the people of California.

It states "The electrolytic processes associated with plating operations cause mists containing hexavalent chromium to be released from plating tanks, which are eventually emitted into outdoor air through building openings and vents. Despite control systems installed at chrome plating facilities, hexavalent chromium emissions continue to be released from facilities into the surrounding environment and communities. Fugitive emissions occur because the control systems do not capture 100 percent of the emissions from these facilities. Many of these facilities are located close to sensitive receptors (e.g., schools, residential care facilities, and homes where children and elderly reside), and are also located in disadvantaged communities."

Let's look at how misleading that paragraph is and how it is being misapplied by CARB.

"The electrolytic processes associated with plating operations cause mists containing hexavalent chromium to be released from plating tanks, which are eventually emitted into outdoor air through building openings and vents". This statement is NOT factually correct at hard chrome plating facilities with emission control systems. At hard chrome plating facilities, 100% of hard chrome plating tank mists are captured by the push pull headers of the emission control systems and directed into HEPA filters which at 99.97% efficiency reduce the pollutants to nearly nothing, This is confirmed by regulatorily required source testing. CARB knows this and SCAQMD knows this. But the writer needs to setup an argument about fugitive emissions and they need the reader to believe that mists are created and flying around in the air. They also want the reader to believe these emissions are coming from plating tanks and not from rinse or other associated tanks (for example, dichromate seal tanks) - which is a VERY important distinction. It takes a stretch of logic to call a dichromate seal tank a "plating tank" but that is what the writer does. Let's look at the next sentence.

"Despite control systems installed at chrome plating facilities, hexavalent chromium emissions continue to be released from facilities into the surrounding environment and

communities." CARB may have reasons for being vague with this statement but it is highly misleading. It is a diplomatic allusion to joint failures of the regulatory community) and the management practices at unnamed facilities in Southern California. CARB may not want to be specific about the facilities but a review of media reports lead to identification of Anaplex in Paramount and Hixson Metal Finishing in Newport Beach. If there are others, CARB has not identified them or the situations to which they allude. So there is no way to comment on them. For the record, it is very important to recognize that Anaplex is NOT a hard chrome plater and Hixson Metal Finishing is NOT a hard chrome plater. Neither of these firms had hard chrome plating tanks with HEPA emission control systems. The sentence is constructed artfully. It wants the reader to believe the facilities had emission controls. The truth? The facilities DID have emission controls, but certain tanks did not. As a result, there were releases into surrounding communities. CARB and SCAQMD should disclose to the public in a straight-forward way that the regulators did not require emission control systems on those dichromate seal tanks. CARB may have other data from which they can support the contention of fugitive emissions but the lack of specificity and quantification is notable.

"Fugitive emissions occur because the control systems do not capture 100 percent of the emissions from these facilities." This is an artfully worded, factually true statement that implies equality between hard chrome plating tanks with HEPA systems capturing 99.97% of hex chrome, and to un-controlled dichromate tanks which happen to be located in a facility with controls. There is no distinction made about the level of fugitive emissions from the two vastly different facilities. It is used in this purpose paragraph to justify a sledgehammer approach which will be used to eliminate all chrome plating.

"Many of these facilities are located close to sensitive receptors (e.g., schools, residential care facilities, and homes where children and elderly reside), and are also located in disadvantaged communities." This is a true statement. The sentence could have said "Many of these facilities are located close to sensitive receptors and many are NOT located close to sensitive receptors." That is also a true statement but it does not serve the writer's cause to say it that way. The writer continues, "Some...are also located in disadvantaged communities". True. But, unsaid, some are NOT located in disadvantaged communities. Our facility is located in a community that is not scored by CalEnviroScreen because there is no residential population. Hixson Metal Finishing is located in a community with a 65th percentile score on CalEnviroScreen. Most readers will not perceive Newport Beach as a disadvantaged community.

The misleading purpose statement contained in the SRIA creates a decision environment for the CARB board which, in my opinion, creates a potential legal liability for the CARB and the State of California. The purpose as stated in the ISOR does not match the purpose in the SRIA.

Response 41-1:

Please see Master Response 12. CARB staff disagrees with this comment. The commentor states that "At hard chrome plating facilities, 100% of hard chrome plating tank mists are captured by the push pull headers of the emission control systems...". CARB staff have not received any documentation to indicate that these systems are capable of a capture efficiency of 100 percent.

The commentor goes on to state that CARB staff are being misleading when we stated, "Despite control systems installed at chrome plating facilities, hexavalent chromium

emissions continue to be released from facilities into the surrounding environment and communities." As discussed in Master Response 12, control systems are not 100 percent effective at capturing and controlling emissions, and fugitive emissions remain an area of concern for nearby communities. This means that hexavalent chromium continues to be emitted by chrome plating facilities.

Anaplex and Hixson Metal Finishers are chromic acid anodizing facilities that have various types of control technologies. Hard chrome plating operations with HEPA emissions control systems can still lead to elevated ambient levels of hexavalent chromium. For example, the results of CARB's air monitoring study from a functional (hard chrome plating) with HEPA emissions control system showed that high concentrations of hexavalent chromium occurred downwind from the facility and near openings close to the plating area.

Finally, CARB disagrees with the comment regarding inconsistencies between the SRIA and ISOR. The 2023 Amendments reduce hexavalent chromium emissions to protect public health. Both the SRIA and ISOR contain this purpose statement. The ISOR elaborates more on how the communities located near chrome plating facilities are impacted by hexavalent chromium, a toxic air contaminant (TAC) with no known safe level of exposure. There is no requirement that the purpose statements in these two documents should be identical. Both purpose statements indicate that the goal of the Proposed Amendments is to reduce the impacts on public health that result from exposure to hexavalent chromium emitted from chrome plating facilities. CARB staff made no changes to the Proposed Amendments based on the received comments.

The purpose statements contained in both documents are listed below:

SRIA purpose statement:

"The purpose of the Proposed Amendments is to further reduce hexavalent chromium emissions from chrome plating operations to protect public health. Hexavalent chromium is an extremely potent human carcinogen and was identified by CARB as a toxic air contaminant (TAC) with no known safe level of exposure. A recent evaluation of the Chrome Plating ATCM and the effectiveness of the regulation showed that there are less toxic alternatives available and improved technologies and operating practices that can be implemented to further reduce hexavalent chromium emissions from chrome plating operations in California. With these improvements, the Proposed Amendments will eliminate any localized exposure of hexavalent chromium due to chrome plating over time."

ISOR purpose statement:

"The Proposed Amendments further reduce hexavalent chromium emissions to reduce health risks in communities located near chrome plating facilities. The Proposed Amendments aim to reduce the cumulative risk burden that many overburdened and disadvantaged communities located near chrome plating facilities experience. Reducing the health risks caused by emissions of hexavalent chromium, a highly toxic compound, from chrome plating facilities will help address the risk burden experienced by these communities."

Comment 49-10:

The draft update includes a number of misstatements that provide the foundation for its provisions. For instance, the most recent data on compliance was published over a decade ago, in October 2011. [click here](#). Yet, the Initial Statement of Reasons [ISOR] states that

"CARB's evaluation of the effectiveness of the 2007 ATCM demonstrates the need for further amendments." The record does not include an evaluation. Instead, the document refers to people living near many of these facilities being concerned about exposure to elevated concentration of hexavalent chromium without reference to elevated concentrations. [ISOR, Page 3].

Response 49-10:

CARB staff disagrees with this comment. The ISOR contains a thorough evaluation of emissions from the chrome plating industry in California, including evaluations based on the assumption that facilities were in compliance with the 2007 ATCM and, where appropriate, Rule 1469. Please see Master Responses 1 and 11. CARB staff made no changes to the Proposed Amendments based on the received comments.

b) Hexavalent Chromium Alternatives

The following comments expressed related concerns: 6-4, 9-3, 10-3, 13-17, 17-2, 34-2, 40-7, 46-2, 62-1, 63-3, 71-4, 80-1, 97-2, 101-1, 102-1, 114-1, 126-1, 128-2, 144-3, 155-3, and 168-1.

Summary of Comments 6-4 et al.:

Many comments state that trivalent chromium is not an acceptable replacement for hexavalent chromium in decorative chrome plating processes. Commenters note that trivalent chromium is not the same color as hexavalent chromium and mention that the color difference negatively impacts customer acceptance, especially in the classic car restoration and custom car industries.

Many comments state that trivalent chromium does not have the same properties as hexavalent chromium. Commenters note that trivalent chromium does not provide the durable, anti-corrosive properties that hexavalent chrome provides in the same product. Some commentors noted that of the two types of trivalent chrome currently available, one looks closer to the hexavalent chromium but does not have good anti-corrosive properties and durability while the other one has better anti-corrosive properties but does not have the aesthetic appearance of hexavalent chromium.

Response 6-4 et al.:

Please see Master Response 6. Staff revised the regulatory text in response to industry comments expressing concerns about the transition to alternative technology. Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

Comment 11-1:

I own a small business here in California restoring classic cars. I restore and customize cars from the 1920's through the 1960's, all of which have many chrome pieces.

We absolutely cannot use any other method or quality of chrome plating than hexavalent chromium to complement the quality of our builds.

Car culture, while not appreciated by everyone, is an integral and important element of Californian and American popular culture. It is part of our history that we are trying to

maintain and carry on, and it represents a huge industry that affects multitudes of businesses that contribute to the craft.

Response 11-1:

Please see Master Response 6. Staff revised the regulatory text in response to industry comments expressing concerns about the transition to alternative technology. Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

Comment 14-1:

I am writing this letter as a representative of a billion-dollar industry that works hand and hand with the decorative chrome industry – an integral and critical part of the highly specialized work we conduct.

The vehicles entrusted to my company are some of the rarest and most valuable in the world and require a diverse set of skills and supporting infrastructure to work on them. Akin to rare artwork or historic building restoration, the vehicles we work on are meticulously and authentically rebuilt – using historical archives, original factory drawings and documents and numerous other, sometimes rather arcane methods. In addition, the materials, supplies and technology utilized to restore and maintain these historic artifacts are equally obscure.

Vintage cars touch all walks of life – and have become something much more than a niche hobby. To further reinforce this reality and the nature of these vehicles, we work with the Historic Vehicle Association, which is working in collaboration with the U.S. Department of the Interior in developing a National Historic Vehicle Register to carefully and accurately document and recognize America’s most historically significant automobiles, motorcycles, trucks and commercial vehicles.

This project is the first of its type to create a permanent archive of significant historic automobiles within the Library of Congress. As you can imagine, working with historically significant vehicles – and in turn, our collective history – details matter. As historians entrusted with this responsibility, when considering these details, “close enough” is not good enough. There is “correct” and “incorrect”, “right” and “wrong”. We work incredibly hard to ensure that restorative work is done correctly and right. Along these lines, the coatings used throughout the history of the automobile is very much a part of our responsibility to get right, and quite simply put – there is no substitute for proper, Hexavalent Chrome. Historians, collectors, aficionados, curators – we all know the difference between “proper decorative chrome” vs alternatives.

Alternatives cannot be used and should not be used on these incredibly valuable and coveted assets.

Massive events around the world celebrate the automobile – including the most prestigious car event in the world – the Pebble Beach Concours d’Elegance located in Monterey, California. Cars invited to and displayed at Pebble, set the standard for the history books. The wealthiest individuals in the world attend, and the most valuable vehicles in the world are on display. Hundreds of millions of dollars of automotive history are on display every August – and simply put, chrome alternatives would never be accepted during the judging process – whereby the best and correctly restored vehicles are awarded. This reality would repeat itself at events the world over.

Response 14-1:

Please see Master Response 6. Staff revised the regulatory text in response to industry comments expressing concerns about the transition to alternative technology. Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

Comment 5:

This commentor provided a comparison of hexavalent chromium to trivalent chromium as they apply to hard chrome operations. The comparison is summarized in the table below.

A Process Comparison: Hexavalent vs. Trivalent Hard Chrome

Hexavalent Cr	Trivalent Cr
Excellent deposit properties	Struggles with many issues
Simple bath chemistry	Very complicated bath formulation
Very good corrosion resistance	Requires a nickel deposit first
Fewer tanks & less floorspace	Much larger plating lines
Reverse etch activation	Needs an alkaline cleaner and acid dip
Broad operating window	Sensitive to operating conditions
Easy to control & maintain	Daily analysis & additions needed
Tolerant to bath impurities	Very sensitive to many impurities
Uses standard lead anodes	Expensive MMO anodes required
Tolerates water additions	Sensitive to water concentration
Bath additions not a problem	Requires 'Bleed and Feed'
Indefinite bath life	Periodic bath dumps required
Easily Zero Discharged	Waste treatment always needed
Over 100 years of success	New and unproven
Much lower investment	Considerable higher entry cost
Inexpensive to operate	Significantly higher operating costs
Many possible vendors	Tied to a single supplier
Easily made Sustainable	Considerable waste generator

Response 5:

Please see Master Response 6. Staff revised the regulatory text in response to industry comments expressing concerns about the transition to alternative technology. Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

Comment 13-23:

The timeline for change in decorative [functional] chrome plating is much longer than the proposed 2 years. The two-year deadline for facilities to transition to trivalent chrome plating does not work [even if our customers were to accept trivalent chromium plating]. Each facility will be required to obtain funding, purchase, install and calibrate new tanks and lines, and obtain the necessary permits. Local permits alone can take up to five years.

Response 13-23:

Please see Master Response 6. Staff revised the regulatory text in response to industry comments expressing concerns about the timing of the transition to alternative technology.

Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

The following comments expressed related concerns: 49-4 and 63-2.

Summary of Comments 49-4 and 63-2:

Comments 49-4 and 63-2 explain that transitioning to trivalent chromium plating is expensive. Comment 63-2 noted that it took years for the commenter to switch to trivalent chromium and cost hundreds of thousands of dollars.

Comment 49-4 states that “no data is provided to support the assumption that California facilities will explore CrVI alternatives, and invest in the transition to alternatives, without customers. While we appreciate the intention to further the acceptance of alternatives through the appropriation of state funds, any success is speculative. The January 1, 2026 ban is not conditioned on changes in customer acceptance of alternatives. It is not conditioned on the ability of a facility to close down its CrVI plating operations and simultaneously invest in alternative plating operations.”

Response 49-4 and 63-2:

Please see Master Responses 6-8. Staff revised the regulatory text in response to industry comments expressing the need for additional time for decorative chrome plating facilities to transition to alternative technology. Please see Master Response 4 for a discussion of the extension of the phase out and the alternative phase out pathway.

Comment 85-11:

As NASF and its California members have continued to emphasize to CARB staff, even though decorative trivalent chromium processes are available, they do not work for all applications and for all customer specifications. The transition is complex and time-consuming and requires significant testing and evaluation to guarantee product safety, performance and consumer acceptance.

Unlike the proposed bans in the CARB rule, the technology transition is not a one-size-fits-all approach and must be addressed application by application to ensure that customer specifications for product performance and safety are met.

Response 85-11:

Please see Master Responses 5 and 6.

Comment 89-1:

These sustainable [hexavalent chromium] alternatives technologies are growing and improved upon each and every day as we commit to these goals but also these alternatives have carried many hurdles for the industry to adopt.

In the Decorative segment, a sustainable alternative solution we offer is Trivalent Chrome. Today, Trivalent Chrome with the newest generations can offer matching colors, new colors, leading corrosion resistance, and exceptional uniformity of deposits. But it's not as simple as pumping out hexavalent chrome tank, scrubbing down the line, and pumping in Trivalent Chrome. Applicators must adopt new equipment, train on new analyses, implement new maintenance techniques, finalize local and regional permits, test and market to current or

new customers, and of course have the space available, time, and financial capital to complete the transition.

New technologies in Plating on Plastics eliminating Hexavalent Etchants from the Plating on Plastics segments are also growing acceptance into the industry. The fully Chrome-Free alternatives have taken foot largely due to Automotive OEM commitments to sustainability and expansion into new end use industries such as aerospace and electronics but these technologies too have high hurdles and high financial costs to implement. Many applicators in Plating on Plastics will be required to construct or rebuild up to half of their existing manufacturing line to implement these alternative technologies. This will incur vast costs, well above the presented estimates by CARB, for line construction, testing, implementation, permitting, and lost production time during installation.

OEMs and their Tier level customers share in these many hurdles as the risk to ensure retesting, re-PPAPing, and approvals are met without interrupting the delicate supply chain this Industry operates on.

As we step forward towards these goals and through the many hurdles our teams at MacDermid Enthone ask with great magnitude to ensure fully adequate funding and reasonable timeliness for applicators and their customers to step firmly into these alternative technologies.

Response 89-1:

Please see Master Responses 4-7.

The following comments expressed related concerns: 13-4, 17-3, 17-6, 21-1, 27-4, 28, 30, 40-5, 46-1, 49-6, 71-2, 78-1, 79-5, 89-2, 110-2, 139-1, 14.6-3, 152-1, 155-2, 159-1, 174-5, and 175.

Summary of Comment 13-4 et al.:

Many comments state that there is no viable alternative for hexavalent chromium in functional hard chrome or chromic acid anodizing applications. Commenters note that technology development for hard chrome alternatives has been ongoing for more than 25 years, and that no suitable alternatives have been identified. These comments explain that:

- Products plated by hard chrome plating and chromic acid anodizing are used by the aerospace industry to protect parts from corrosion. Hard chrome plating is also used to assure the correct function of thrust reversers, landing gear, rudder and aileron actuators, propulsion systems, and other flight and landing critical components.
- Functional chrome plating supports manufacturing, processing, repair, and maintenance of critical aircraft components, and aviation manufacturers use chrome plating to improve the atmospheric corrosion resistance of metal parts and prevent dangerous, mid-op failures of critical equipment. Furthermore, the Federal Aviation Administration (FAA) requirements dictate the use of hexavalent chromium.
- Chrome plating reduces friction, improves durability, reduces seizing, and resists oxidation and corrosion.
- Hard chrome plating and chromic acid anodizing are critical to the aerospace industry. Aerospace and defense companies like Boeing rely on hexavalent chrome plating,

which is called for in many of their specifications such as BAC5709 and MIL-STD-150F, to produce quality parts that protect human life and our nation. Critical parts used in aircraft landing gear assemblies and propulsion systems require hexavalent chrome to properly function.

- Hard chrome plating is a process used in the defense, medical, automotive, and many other industries to improve metal parts.
- Hexavalent chromium provides a hard and durable surface that keeps many machine parts in service longer, and chrome plating can be used as bulking material to restore the original dimensions of metal components without compromising their integrity.

In addition, comments state that, once a viable hard chrome or chromic acid anodizing alternative is identified, additional research and development work will be needed to make the product commercially viable. Comments state that alternatives will not be commercially viable for all hard chrome plating and chromic acid anodizing applications. Furthermore, commenters note that even if a replacement technology existed for hard chrome plating and chromic acid anodizing, industries such as the aerospace, aviation, and defense industries will take decades to approve the alternative and change processes. Therefore, commenters assert that any deadline date is unsupported from a scientific and technical standpoint.

Response 13-4 et al.:

Please refer to Master Responses 4-6.

The commentors make the assertion that "FAA requirements dictate the use of hexavalent chromium." The commentor seems to imply that the FAA dictates the use of hexavalent chromium in general, as though it is the only material that can meet the performance standards. FAA certifications are based on whether or not the component or system, as submitted for certification, meets the specified performance standards. If a component or system was submitted for certification that did not use hexavalent chromium, yet still met the performance standards, the FAA would certify that component or system.

The commentor also states, "Aerospace and defense companies like Boeing rely on hexavalent chrome plating, which is called for in many of their specifications such as BAC5709 and MIL-STD-150F, to produce quality parts that protect human life and our nation." Again, these documents specify that when hexavalent chromium is used, it must meet certain specifications. That fact that these documents exist does not preclude the use of other materials in the future so long as they meet the specified performance standards.

The following comments expressed related concerns: 13-18, 21-2, 43, and 69.

Summary of Comment 13-18 et al.:

These comments allege that CARB does not have the authority to regulate the use of hexavalent chromium in chromic acid anodizing and hard plating applications that support aviation.

Comment 13-18:

CARB lacks the authority to regulate interstate commerce. California relies on the federal air transportation framework for support of every major economic driver in the state, including tourism, agriculture, aerospace, government, and technology.

California delivers 15% of United States GDP by relying on the air transportation infrastructure. The air transportation system relies on and includes repair and maintenance of that system. Hexavalent "Hard" Chrome plating is the only acceptable, technologically feasible, FAA approved method by which flight and safety critical elements of the air transportation can be maintained.

The air transportation system is interstate commerce. Even if CARB believes that it has the legal authority to regulate the performance of a necessary element of safe air travel within California, how can CARB argue that it has the authority to ban a critical element of the system from which every person in California benefits?

Comment 21-2:

We [hard chrome platers] follow the explicit direction of engineers within the OEMs and the airlines and use federal and internationally recognized standards to perform the work. In the United States, the design, production, and maintenance of all aircraft are under the jurisdiction of the FAA who audit and enforce the strict adherence to the requirements. Those requirements dictate the use of hexavalent chrome. People go to jail and/or are fined if regulations are not followed.

The United States aviation infrastructure is interstate commerce. Aircraft repair and maintenance is a necessary part of that infrastructure. The CARB does not have authority to regulate interstate commerce.

Even the newest Boeing 787 aircraft which will be manufactured for the foreseeable future and will fly for decades are designed to be made and maintained with hexavalent chrome. Every aircraft in the world contains a part that was hexavalent chrome plated in California. Aircraft have usable lives spanning decades and will persist beyond 2039.

Comment 43:

Aviation Repair Solutions, Inc. repairs commercial aircraft parts as a participant in interstate commerce and under the purview of the Federal Department of Transportation Federal Aviation Administration. As such, we are legally required by federal law to perform our work in concert with FAA regulation. FAA regulation requires us to repair parts in compliance with FAA approved repairs. FAA approved repairs require us to use hexavalent chrome plating. If we do not use hexavalent chrome plating, we are in conflict with federal law.

The proposed CARB ATCM violates the commerce clause and supremacy clauses of the United States Constitution.

Comment 69:

Changes to hex chrome plating processes made by authorities in the context of FAA approved repairs (e.g...DER, CMM, OHM, AMS, SOPM, etc..) which require the establishment of new tanks, or changes to existing tank chemistries, temperatures, and methods should not be dis-allowed by CARB when the facility has the appropriate controls in

place or agrees to put them in place concurrent with the new or changed process. This is an Air Safety issue under the purview of the US Department of Transportation.

Response 13-18 et al.:

The Health and Safety Code (HSC) grants CARB authority to regulate sources of toxic air contaminants (HSC §§ 39650 et seq.). The Proposed Amendments regulate hexavalent chromium emissions from chrome plating facilities within California, which are stationary sources of air toxic emissions under the purview of CARB's regulatory authority. The Proposed Amendments are based on CARB's statutory authority and do not violate the Commerce Clause or the Supremacy Clause of the United States Constitution.

Additionally, please see Master Responses 4-6, and the Response to Comment 13-4.

Comment 42-1:

The CARB ATCM SRIA estimates a benefit of 10 pounds of hex chrome per year. 86% of that benefit is derived from the impact of the ATCM on hard chrome platers. Yet, the ATCM does not identify any technology which is capable of replacing hard hex chrome plating. A technology is imagined for the purpose of cost and benefit estimation in the SRIA.

We are able to determine from the SRIA that the attributes of the imagined hard chrome plating technology are as follows:

Emissions - None

Implementation Cost - \$4 Million per facility

Method of applying the technology - undefined

On-going operational cost - Same as current technology

On-going operational process time - Same as current technology

Effectiveness of technology attributes - Same as current technology (with no analysis of hardness, lubricity, coefficient of friction, wear resistance, corrosion, porosity, method of application, etc..)

Technology adoption rate - immediate at implementation of the new technology

Technology adoption scope - all applications simultaneously

Technology development as it relates to hard chrome alternatives has been ongoing for more than 25 years and is well understood. The assumptions above are NOT consistent with the most likely technological development path for a hard chrome alternative in the future. The most likely technology development path will not have a binary yes/no ability to change technological attributes (named above) all at once across all applications.

This SRIA completely fails to recognize how technology change occurs and is implemented, yet it allows CARB to take credit for 86% of a benefit without associated recognition of cost.

There is no analysis of the costs to other supply chain participants (manufacturers, maintainers, etc...) from changing to the imagined technology in the this SRIA.

Response 42-1:

On January 20, 2022, Workgroup #6 published a preliminary cost document that listed all cost assumptions that would be used to draft the SRIA and requested industry to review it and provide any data that would impact the SRIA and calculations presented therein. CARB staff received no comments during that period. Since that time, CARB staff have repeatedly asked industry for additional information. No substantiated cost information was provided by industry to CARB that it could verify for use in the SRIA.

In addition, please see Master Responses 1, 2, 5-7, and 13, and Response 13-13.

The following comments expressed related concerns: 107-2 and 115-4.

Comment 107-2:

Second point is as is emerging here is the distinction between decorative chrome and hard chrome is a bit arbitrary. I--there were -- there are many of our members who have non-disclosure agreements for the kind of products that they product, but you see the hints of medical devices, functionality of some of these products. And so why is the distinction not clear between dec and hard?

Comment 115-4:

Decorative is not just for aesthetics. It's also used for functional purposes on machine parts, including medical parts for its protection against corrosion and wear resistance.

Response 107-2 and 115-4:

The terms "decorative chrome plating" and "hard chrome plating" are clearly defined in the Proposed Amendments. These definitions were used in the 2007 ATCM and have not been substantively revised. Note that the definition for "decorative chrome plating" explains that this process is used to "provide a bright surface with wear and tarnish resistance." CARB staff believe that the definitions for decorative and functional chrome plating listed in the Proposed Amendments are sufficient to address the commentors' concerns. CARB staff made no changes to the Proposed Amendments based on the received comments.

c) Health Impacts and Benefits

The following comments expressed related concerns: 6-10, 13-20, 14-4, 24-2, 25-2, 31-1, 40-10, 48-2, 51-2, 60-3, 62-6, 76-1, 79-3, 85-6, 91-2, 116-2, 126-5, 130-1, 131-1, 143-1, 151-2, 154-1, 156-2, and 161-1.

Summary of Comment 6-10 et al.:

Many comments state that chrome plating facilities are not harming community health because the emissions from chrome plating facilities are so low. Commenters state that hexavalent chromium is highly regulated and note that chrome plating facilities are monitored by multiple agencies and must comply with emission control, air district rules, wastewater treatment, worker training, personal protective equipment (PPE), and hazardous waste removal to make sure that employees of chrome platers, public health, and the environment are protected. In addition, comments cite the good health of long-term employees as proof that chrome plating facilities do not cause health issues.

Response 6-10 et al.:

Please see Master Responses 1-3, 12, 14, and 15. CARB staff appreciates the reductions that have been achieved through control technologies and compliance with the 2007 ATCM and Rule 1469 (for facilities located in SCAQMD's jurisdiction). However, fugitive emissions continue to be a significant source of concern for communities.

Employees of chrome plating facilities comply with safety standards, including employee training and personal protective equipment, to protect their health. On the other hand, the public does not choose to be exposed to hexavalent chromium from the chrome plating industry and has no added protection from this highly carcinogenic toxin. Exposure to hexavalent chromium increases the likelihood that an individual will develop cancer or experience non-cancer health effects like respiratory irritation, severe nasal and skin ulcerations and lesions, perforation in the nasal septum, liver and kidney failure, and birth defects. As discussed in Master Response 2, the Board has determined that a zero-emission level is necessary to protect the public health, as did the Legislature in AB 211. The Proposed Amendments are intended to reduce that cancer risk to zero, and in doing that, reduce the number of people developing cancer from exposure to hexavalent chromium from chrome plating operations to zero. In addition, the phase out of hexavalent chrome from chrome plating operations will have the added benefit of reducing the risk to a facility's employees.

Comment 4-1:

On page 3a-9 of the 2019 *CERP* for Wilmington, Carson, and West Long Beach, the chart shows the total cancer risk in our area by cause. It shows that cancer risk from diesel is more than 1000 in a million but that cancer risk from ALL OTHER SOURCES COMBINED (INCLUDING HEX CHROME) is less than 240 per million. So, why does CARB, in the ISOR document take pains to point out that hex chrome is 500 times more cancer potent than diesel? Why bring up diesel in the hex chrome ISOR document at all? Is diesel so prevalent that we measure and express cancer risks relative to diesel in ATCMs so people can understand? Has diesel pollution become the standard to which other risks are compared? An astute reader will go on to note that the same cancer risk chart on page 3a-9 shows the relationship between diesel and other air toxics IN THE ENTIRE SOUTH COAST BASIN which is home to 86 of the 113 hex chrome facilities in this ATCM. This isn't just an isolated area this is the vast majority of what your decision will impact with the ATCM. The data shows diesel FAR outweighs hex chrome in terms of cancer risk to the entire South Coast community.

Response 4-1:

Hexavalent chromium is compared to diesel PM in the ISOR to provide context for readers and the Board. According to OEHHA, hexavalent chromium is one of the most toxic air contaminants, in this case, about 500 times more carcinogenic than diesel PM. This means that if you are exposed to the same amount of hexavalent chrome and diesel PM, the cancer risk from hexavalent chrome is 500 times greater. Additionally, the Board has taken actions to eliminate diesel PM, another toxic air contaminant, from many mobile sources by setting deadlines to transition many of these sources to zero emissions. Moreover, emissions of hexavalent chromium from chrome plating facilities are highly localized emissions from stationary sources, which results in specific concerns for nearby communities.

Please refer to Master Responses 2-3 and 6. CARB staff made no changes to the Proposed Amendments based on the received comment.

Comment 12-5:

According to the American Cancer Society, hexavalent chrome causes cancer. Somehow, the California Health and Safety Code and therefore CARB bans it. But, also according to the American Cancer Society, alcoholic beverages (wine) cause cancer. California markets it to the world and our governor owns a wine business.

Response 12-5:

CARB does not have the authority to regulate consumption of alcoholic beverages. CARB is responsible for reducing air pollution, including toxic air contaminants, and protecting public health. Moreover, alcohol consumption is a personal choice. In contrast, the public does not choose to be exposed to hexavalent chromium from the chrome plating industry.

Please refer to Master Response 2 and 3. CARB staff made no changes to the Proposed Amendments based on the received comment.

Comment 13-10:

OEHHA has established an acceptable level of exposure to hexavalent chromium. It has further established that an inhalation exposure of 0.001 micrograms per day is a level at which there is no significant risk pursuant to California "Proposition 65". See Title 27 Cal. Code of Regs Section 25705(b)(1).

1. Are OEHHA's standards for safe levels of chemicals and health generally considered for all ATCMs?
2. Are the OEHHA standards for hexavalent chromium as a carcinogen and health risk being considered by CARB in this Draft Chrome ATCM?
3. Since OEHHA has not established a "zero" threshold for exposure for hexavalent chromium, is there an acceptable level of hexavalent chromium emissions that could continue to be emitted from MFs??
4. Are OEHHA's inherent margins of safety for all hexavalent chromium allowable emission levels being taken into account for this Draft Chrome ATCM?
5. Has CARB evaluated the application of equivalent hexavalent chromium reductions from other hexavalent chromium uses as an alternative to an outright ban?
6. Has CARB staff evaluated continued hexavalent chromium use when facilities do not pose a harmful risk to sensitive receptors exceeding OEHHA's standards?
7. Has CARB identified facilities providing Proposition 65 notice to the local community? Is there a list of these facilities per air district? Have these Proposition 65 notices been accounted for as part of the evaluation for Environmental Justice?
8. Has CARB applied Proposition 65's no significant risk threshold for hexavalent chromium for off-site exposure (i.e., environmental exposure) at the known 141 MFs in California?
9. Notwithstanding Proposition 65, has CARB otherwise evaluated actual community risk at every MF facility?

Response 13-10:

1. Different Office of Environmental Health Hazard Assessment (OEHHA) programs have developed health values for different purposes. The Proposition 65 “safe harbor level” does not mean that exposure levels lower than this level are identified as safe. It is an exposure level below which no Proposition 65 warnings are required. The “safe harbor” level gives businesses a “safe harbor” in terms of the Proposition 65 warning requirement. When conducting health risk assessments for TACs, a different set of OEHHA health risk values are used.
2. Yes. The estimation of cancer and non-cancer risks for the Proposed Amendments to the Hexavalent Chrome ATCM are based on the health values developed by OEHHA.
3. Please see Master Response 2.
4. California Health and Safety Code, Division 26, chapter 3.5, article 3, section 39660(c)(2) directs OEHHA to include a “margin of safety” with all the inhalation cancer unit risk factors (IURs) to ensure OEHHA accounts for the uncertainty that may be associated with the derivation of an inhalation IUR for the general human population. Health and Safety Code section 39660(c)(2)(B) states: “An ample margin of safety that accounts for the variable effects that heterogeneous human populations exposed to the substance under evaluation may experience, the uncertainties associated with the applicability of the data to human beings, and the completeness and quality of the information available on potential human exposure to the substance. In cases in which there is no threshold of significant adverse health effects, the office shall determine the range of risk to humans resulting from current or anticipated exposure to the substance.” In this regard, OEHHA does apply a “Margin of Safety” in the form of Age Sensitivity Factors (ASFs) into the cancer risk equation, which also includes the chemical-specific inhalation cancer potency factor. The ASFs account for increased sensitivity of infants and children (compared to adults) that are exposed to carcinogens by applying a 10x ASF for third trimester to less than 2-years of age, and a 3x ASF for ages 2-years to less than 16-years of age. The Hot Spots and Analysis Program (HARP) integrates the ASFs into the cancer risk equation when estimating the lifetime (70-year) cancer risk to a carcinogen based on its IUR. More information can be found on page 19 of OEHHA’s Technical Support Document for *Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures*; <https://oehha.ca.gov/media/downloads/cnr/tsdcancerpotency.pdf>.
5. Please see Master Responses 2 and 3. CARB staff will continue to investigate other sources of hexavalent chromium impacting communities in developing strategies to reduce health impacts caused by emissions of this TAC.
6. As discussed in Master Response 14, the Proposed Amendments are intended to reduce the pollution burden on all communities where chrome plating is conducted by eliminating emissions of hexavalent chromium from chrome plating operations. CARB staff considered a regulation that would be applicable based on modeled risk or on proximity to nearby receptors. However, staff did not follow this path because risks and proximity to sensitive receptors could change over time as facilities change their operations and residences, schools, or other receptors could be constructed near chrome plating facilities. Please also see Master Responses 2 and 6.
7. CARB staff have not identified such a list.

8. Proposition 65 notices are not typically evaluated for the development of Airborne Toxic Control Measures. The Proposition 65 Safe Harbor levels are developed for purposes specific to Proposition 65 and not for other risk management activities. OEHHA's Proposition 65 Program develops safe harbor levels for listed chemicals. Safe harbor levels, which include No Significant Risk Levels (NSRLs) for cancer-causing chemicals and Maximum Allowable Dose Levels (MADLs) for chemicals causing reproductive toxicity, have been established for many of the chemicals listed under Proposition 65. Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals on the Proposition 65 list. Businesses causing exposure that are below the safe harbor levels are exempt from the requirements of Proposition 65. The NSRLs provide "safe harbor" values that aid businesses in determining if they are complying with the law, but they should not be interpreted as "safe" or "acceptable" levels. The California Attorney General's Office enforces Proposition 65. For enforcement information, the commenter can contact the California Attorney General's Office at (510) 873-6321 or visit <https://oag.ca.gov/prop65>.
9. CARB staff conducted a health risk assessment (HRA) to model air concentrations of hexavalent chromium emissions from chrome plating facilities and quantify the potential cancer and noncancer risks to receptors near chrome plating facilities. CARB staff developed a facility inventory for hexavalent chromium that reflects the anticipated emissions of hexavalent chromium released annually under the 2007 ATCM and the Proposed Amendments. In this analysis, three generic facility configurations were used to represent chrome plating facilities: (1) decorative platers that use only fume suppressants, (2) both decorative platers and small functional platers that use add-on controls, and (3) large functional platers that use add-on controls. The modeling simulates the operation levels of chrome plating and chromic acid anodizing facilities throughout California rather than evaluating each specific facility. Conducting a separate health risk assessment for each chrome plating facility in California would be infeasible and is not required for this type of analysis. The HRA analysis did not account for fugitive emissions. Please see Master Responses 1 and 12).

Comment 20:

Let's look at the risk from our facility using the data that CARB provides on pages 173 to 175 of the ISOR. CARB breaks the risk up into two pieces, the risk to residents, and the risk to off-site workers in the area. We are located in an industrial zone in the 90813 zip code area. There are no residential buildings within 500 meters. According to figure V.1 that means that our cancer risk to residents is ZERO. Yes, zero risk to residents. But, let's go on and look at offsite worker risks. At the bottom of page 175, CARB states, and I quote, "For the 2019 baseline, the estimated potential cancer risks range approximately from less than one in a million to 17 chances per million, depending on the level of plating operations at the facility." So, we can use this to compute the cancer risk. Even though 17 in a million is the worst case, and even though it would be better for my illustration to use one in a million, we will use the higher number; even though we are a smaller facility. How many offsite workers are there around us? We don't know for sure but we can make a useful estimate. The 90813 zip code is one of the densest in the state (#31 as a matter of fact) and has a density of 18,175 people per square mile. If we draw a circle around our facility at a radius of 500 meters, the area is 0.3 square miles. Applying a little arithmetic, we can compute an estimate of 5,452 workers within that circle if the work force is dispersed at a similar density to residents. But maybe it is not, so let's make an extreme assumption about the number of workers within 500 meters of

us and say it is 25,000. Our assumption is between 5,000 and 25,000 people work within 500 meters of us. Using the highest figure, we can compute that 0.425 offsite workers ($25,000 \times 0.000017 = 0.425$) might get cancer. Let me repeat that number 0.425. And looking at a previous sentence CARB states that, and I quote: "The guidelines assume that a worker at a nearby worksite is exposed to the emissions for 25 years, 250 days per year, and 8 hours per day." So, in order to get 0.425 cases of cancer, we need 25,000 people to stay within 500 meters of this facility for 8 hours a day, 250 days per year, for 25 years! There it is, for my facility, using CARB's numbers and conservative assumptions, we get less than 1/2 of one cancer case.

Response 20:

As discussed in Master Response 1, CARB staff used the HRA methodology based on the *Air Toxics Hot Spots Program – Risk Assessment Guidelines* by OEHHA (2015). These guidelines have gone through a robust public and scientific peer review process. CARB staff used this methodology to estimate the potential cancer risks to residents and off-site workers based on exposure to hexavalent chromium from chrome plating operations. CARB staff used the recommended inputs described in the methodology, which includes a 30-year exposure duration. CARB staff used the recommended air dispersion model (AERMOD) and three generic facility configurations were used to represent chrome plating facilities: (1) decorative platers that use only fume suppressants, (2) both decorative platers and small functional platers that use add-on controls, and (3) large functional platers that use add-on controls. The modeling simulates the operation levels of chrome plating and chromic acid anodizing facilities throughout California rather than specific locations. The modeling results indicate significant potential residential and off-site worker cancer risks near or adjacent the emission sources.

The commentor also makes the assertion that, "...0.425 offsite workers ($25,000 \times 0.000017 = 0.425$) might get cancer." The burden calculation that is suggested by the commentor is not appropriate for the risk assessment that was performed. The generic assessment (as discussed in Appendix F) that was done is representative of any location within California based on a range of release parameters, emissions, and meteorological conditions. The assessment performed is intended to estimate the potential cancer risk for both workers and residents. The logic used by the commentor to arrive at this conclusion is incorrect and overly simplistic. Because of the uncertainties inherent in health risk assessments (see Section III of Appendix F), it is not appropriate to use this calculation to refer to an individual person's increased likelihood of developing cancer. Instead, it is more appropriate to refer to the number of people in a population that may have an increased risk of developing cancer. Nevertheless, exposure to carcinogens, especially a toxin that is as highly carcinogenic as hexavalent chromium, does represent a real increase in the likelihood of individual people developing cancer. The Proposed Amendments are intended to reduce that cancer risk to zero, and in doing that, reduce the number of people developing cancer from exposure to hexavalent chromium from chrome plating operations to zero.

Furthermore, CARB disagrees with the commentor's argument that some amount of cancer burden is acceptable to the general public. Please also see Master Responses 2, 6, and 14, and the discussion in Master Response 12 regarding the potential risk from fugitive

emissions. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 67 and 150-2.

Comment 67:

Closing chrome facilities to move them out of state will cause worse health outcomes due to unemployment than chrome plating causes.

See:

Centers for Disease Control. NIOSH Study Examines Relationship between Employment Status, Healthcare Access, and Health Outcomes

National Institute of Health. Job Loss and Health in the U.S. Labor Market

There is a link between job loss, alcoholism, drug abuse, and homelessness. It impacts people in every community but particularly social justice communities. This CARB rulemaking will worsen conditions in the communities CARB is trying to help.

Comment 150-2:

What comes with [job loss]? Okay, depression, desperation, and having to go to the stress of looking for another job.

Response 67 and 150-2:

Please see Master Response 8. The negative health effects of exposure to hexavalent chromium can also have negative economic impacts on families.

Comment 24-8:

Biological fun facts: Ingested Cr(VI) is efficiently reduced to the Cr(III) by the gastric juices [De Flora, Badolati et al. 1987]. Cr(VI) can also be reduced to the Cr(III) in the epithelial lining fluid of the lungs by ascorbate and glutathione (Petrilli, Rossi et al. 1986; Suzuki and Fukuda 1990).

Once absorbed into the bloodstream, Cr(VI) is rapidly taken up by erythrocytes after absorption and reduced to Cr(III) inside the red blood cells. In contrast, Cr(III) does not readily cross red blood cell membranes, but binds directly to transferrin, an iron-transporting protein in the plasma (made by the liver) EPA 1998; ATSDR 2000; Dayan and Paine 2001].

Response 24-8:

Thank you for your comment. As discussed in Master Response 2, hexavalent chromium is an extremely toxic carcinogen and is the second most toxic carcinogen on the State's list of Toxic Air Contaminants. Please also see Master Response 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 33:

It would be nice if there were a reliable source of data from which to perform these calculations. See my previous comment(s).

But using the data we have... The California population is around 40 million. So using the most recent CARB data that show a cancer case rate attributable to hex chrome of 16 per

million, that computes to 640 cancer cases from hex chrome annually statewide. See my source here -

How many of those are from chrome platers?

CARB's Appendix B states chrome platers emit 0.90 pounds of hex chrome annually. SC AQMD states that there are 0.8 pounds per day of Hex chrome emissions in the South Coast basin (see data in SCAQMD MATES V Table 3-4) from all sources. That computes to 292 pounds annually ($0.8 \times 365 = 292$). So in the South Coast area chrome platers make up 0.3% ($0.9 / 292 = 0.0031$) of the hex chrome emissions in the area that everyone would agree contains the highest percentage of chrome platers in the state.

So, since chrome platers make up 0.3% of emissions we can compute the cancer cases attributable to chrome platers as 1.98 cases per year.

1.98 CANCER CASES PER YEAR IN CALIFORNIA FROM HEX CHROME ATTRIBUTABLE TO THE ENTIRE CHROME PLATING INDUSTRY!!

Who is in control of CARB? What is the agenda? Setting priorities is one of the most basic functions of management. CARB has spent three years on this rule making.

Response 33:

Cancer risk estimates should not be interpreted as expected rates of disease, but rather as estimates of potential for disease over a long-term exposure, based on current knowledge and a number of assumptions. CARB staff used the methodology of health risk assessment based on the *Air Toxics Hot Spots Program – Risk Assessment Guidelines* by OEHHA (2015). In general, cancer risk estimates are based on the best science available, assumptions of long-term exposure activities and estimated annual concentrations that may, or may not, vary in real time. For more information, please see Appendix F of the ISOR.

The comment disregards the range of potential emissions CARB staff presented in the emission inventory (see Master Response 11) by focusing only on the lowest possible value in that range for its calculation. Moreover, CARB staff disagree with the math used to arrive at the value of 0.3%. It is overly simplistic, inappropriately combines the results of two different data sources, and does not account for the complexities of emission inventory calculations. Finally, CARB staff disagree with the commentor's conclusion that a probability of two cancer cases per year in California attributable to hexavalent chromium emissions from the chrome plating industry is an appropriate argument in favor of maintaining the status quo. The Proposed Amendments protect public health by reducing the probability of Californians developing cancer from exposure to hexavalent chromium from chrome plating facilities to zero due to the phase out.

Please refer to Master Responses 1-3, 6-9, and 13. Also please note that the emission inventory does not include fugitive emissions, which are a significant concern for communities, as discussed in Master Response 12. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 105-1 and 134-1.

Comment 105-1:

I've been in the industry for over 50 years and I'm still working, but I've enjoyed it. And I've worked with chrome, hexavalent chrome all my life in – as a laboratory setting, as a plater, as

– and the environmental end of it also. And this – it seems to me that this is very hard for me to believe that you classify chromium as 500 times more toxic. I am 74 years old. I don't have cancer. I'm fine. The people in our shop are 60 – 50, 60, one is older than me believe it or not still working, healthy. Okay. This is rather deceptive this 500 times more toxic than diesel fuel.

Comment 134-1:

I've been in the – this industry for 28 years. I've been dealing with hexavalent chrome all this time. I'm still alive. I don't have any lesions. I think I'll make it a couple more years. And your effects, what you're talking about up there is flat wrong. The least you could do is wait for our study, which we're spending a lot of money on, which will show you that you can live for 30 years exposed to 200 nanograms for 30 years daily that's per cubic liter, and you won't have a lesion, you want have anything wrong with you. This study is close to being done. The least you could do is wait for that study and then make a decision, instead of cutting all these people out and killing all of our jobs.

Response 105-1 and 134-1:

The carcinogenic toxicity of hexavalent chromium is well established. It is also well known that carcinogens do not affect everyone equally. When exposed to the same carcinogen, at the same concentration, over the same period of time, some people may develop cancer while others may not. The lack of disease in one person is not conclusive proof that a chemical is not toxic. Moreover, the conditions, such as level of concentration, ventilation and exposure frequency, vary depending on the chrome plating facility. The Proposed Amendments are intended to protect all members of the public from hexavalent chromium emitted by all chrome plating facilities in California. Please see Master Response 2. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 148-4:

Barry Wallerstein had said that the diesel emissions on trucks is about 1,500 to 1 – 1500 in a million and our industry contribution is 1 to 10 in a million.

Response 148-4:

Thank you for your comment. CARB staff are unfamiliar with the statement credited to Mr. Wallerstein in this comment nor are we familiar with what the context of the statement may have been. Please see Master Response 9. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 171:

The facts are confusing to many people listening today, because the numbers that are being thrown around are not understood as they should be and when the – when the Cal R – the OEHHA came out with the ruling on chrome, the latest lowest numbers for exposure limits that we've seen anywhere in the world, and certainly nothing close to it anywhere else in any of the other 49 states, we submitted information to – updated information to the regulating

community – communities, so that we went to OEHHA, it went to CARB, and it went to all the agencies, but the report was done by Dr. Proctor – Deborah Proctor, and the report is –

Response 171:

Thank you for your comment. Please see Master Responses 1 and 11. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 176-1:

This is a cruel and inconceived rule. It's premised mostly on innuendo, supposition, and generally inaccurate information. While you may have decreed that hex chrome is a toxic contaminant that has the potential to cause cancer, there has never been a confirmed medical diagnosis that anyone that has contracted cancer from any of these small businesses. Worker longevity in these facilities runs 30, 40, years, and worker illnesses and deaths are no more remarkable than if they were working at CARB or any other commercial enterprise.

Response 176-1:

CARB staff disagree with the commentors statements. Moreover, the commentor did not provide any supporting statements or evidence to substantiate the claims made in this comment.

The carcinogenic toxicity of hexavalent chromium is well established. It is also well known that carcinogens do not affect everyone equally. When exposed to the same carcinogen, at the same concentration, over the same period of time, some people may develop cancer while others may not. The lack of disease in one person is not conclusive proof that a chemical is not toxic. The Proposed Amendments are intended to protect all members of the public from hexavalent chromium emitted by all chrome plating facilities in California. CARB staff made no changes to the Proposed Amendments based on the received comments. Please see Master Responses 1, 2, 6, and 14.

d) Economic Impacts

The following comments expressed related concerns: 4-3, 6-5, 7-1, 8-2, 9-1, 10-1, 11-3, 12-4, 13-3, 14-2, 16-2, 17-4, 22-1, 27-3, 29-1, 31-2, 34-3, 35-3, 36-3, 38-2, 40-1, 41-2, 44-3, 46-4, 48-1, 49-3, 51-3, 52, 53, 54-2, 60-4, 62-2, 64-1, 71-1, 76-3, 79-2, 80-2, 83, 84-1, 85-5, 90-2, 91-3, 97-1, 98-4, 100-1, 101-2, 103-2, 104-2, 107-4, 108, 109-1, 111, 112-2, 113-1, 117, 118-3, 119-1, 120-1, 123-2, 125-2, 128-3, 130-2, 131-2, 132-1, 133, 135, 136-2, 137-3, 139-2, 140, 141, 142-1, 144-1, 145, 146-1, 147-1, 148-1, 150-1, 151-1, 153-1, 154-2, 157-2, 159-2, 161-2, 168-2, and 176-2.

Summary of Comment 4-3 et al.:

Many comments state that prohibiting the use of hexavalent chromium in chrome plating operations will cause chrome plating facilities to lose the business of customers that require hexavalent chromium plating services. These comments note that the loss of business will lead to the closure or out-of-state relocation of California chrome plating facilities and unemployment in the chrome plating industry and other industries that depend on chrome plating. Commenters also note that the Proposed Amendments will damage California's economy by sending revenue out of state.

Response 4-3 et al.:

Please see Master Response 6-8. CARB staff recognize that the Proposed Amendments may result in business contractions or relocations. As discussed in Section IX.(B) of the ISOR, there are direct costs to chrome plating facilities due to the Proposed Amendments. Potential business impacts and impacts to California's economy are discussed in Sections IX.(H) and IX.(F) of the ISOR. As stated in these Sections, the increase in production costs and potential additional decrease in demand of chrome plated parts in California due to the phase out of hexavalent chromium usage for the chrome plating industry has the potential to result in a contraction or decrease in chrome plating businesses. Please see Section IX.(H) for a detailed analysis and estimate of facility closures based on four scenarios ranging from no additional decrease in demand to an additional 75 percent decrease in demand. On the other hand, the projected increase in demand for tanks, building enclosures, add-on control systems, source testing, and other requirements of the Proposed Amendments have the potential to result in an increase in growth for businesses in supporting industries. In short, the Proposed Amendments themselves would not be anticipated to result in significant changes in business elimination within California in relation to the total California economy. The overall jobs and output growth impacts are small relative to the California economy, about 0.04 percent in the years of greatest impact, when the highest additional decrease of demand, 75 percent, is assumed.

The following comments expressed related concerns: 6-6, 13-5, 41-3, 46-3, 49-8, 62-4, 127-2, 149-1, and 176-3.

Summary of Comment 6-6 et al.:

Comments state that chrome plating facilities in SCAQMD's jurisdiction have spent considerable resources on expensive pollution control equipment to comply with the low emission standards specified in Rule 1469. Commenters note that phasing out the use of hexavalent chromium will strand these expensive assets. Metal finishing facilities located in the jurisdiction of SCAQMD are investing tens of thousands of dollars to millions of dollars to comply with Rule 1469 that was adopted in 2018 and updated in 2021. Those investments will be worthless on January 1, 2026.

Rule 1469 requires the installation and operation of add-on air pollution control devices for sodium dichromate seal tanks and other tanks with similar operating properties that were not previously known to be sources of CrVI emissions. The rule also establishes new periodic source testing, enhanced parameter monitoring, new building enclosure requirements, as well as enhanced housekeeping and best management practices.

Response 6-6 et al.:

Please see Master Response 15. Please also see Master Responses 2, 4, and 12.

Comment 13-13:

1. What is the economic cost of this Draft Chrome ATCM? What assumptions are being used for the economic evaluation?
2. What businesses do CARB believe will be impacted with the loss of these activities? How many of the 141 MFs identified by CARB will cease business in California? Is CARB contemplating solely the loss of the activity or is it considering the loss of the entire business?

3. What other businesses, by type, will cease business in California? What is CARB using to base its assumptions for these losses?
4. How many employees will lose their jobs in California? From MFs? From other business (by type)?
5. What indirect economic impacts have been identified by CARB should the current Draft Chrome ATCM be approved? Has CARB considered the increased emissions generated from transportation due to lack of chromium metal finishing activities in California? Has it considered increased traffic issues?
6. What economic impacts are being considered due to the loss of jobs in the local communities that have also been identified as having Environmental Justice impacts?
7. Has CARB evaluated the cost of the Draft Chrome ATCM per pound of hexavalent chromium reduced? Is that amount presently four pounds? What is the economic value per life saved based upon the amount of hexavalent chromium reduced?
8. How is CARB accounting for the capital improvement losses that will occur for 1469-compliant facilities?
9. Is CARB evaluating the economics of any alternative other than a ban? Does that alternative account for the issues raised in the questions in this section above?

Response 13-13:

1. Please see Master Response 8. Cost analysis and assumptions are detailed in the SRIA and then updated in the ISOR.
2. Please see Master Response 8. Staff estimates are based on the REMI results, which include the total economic impacts of the Proposed Amendments.
3. Please see Master Response 8. The trend in employment and output changes by major sectors are illustrated in SRIA Figure 5.1 and Figure 5.2 and later updated in ISOR Figure IX.1. The manufacturing sector is estimated to have the largest negative impacts on job loss in percentage terms, because the chrome plating industry bears most of the direct costs of the Proposed Amendments. The Proposed Amendments are anticipated to increase demand for tanks and replenishment chemistry, and, as a result, the model estimates increased output in the manufacturing sector in 2025 to 2038, by approximately 0.01 percent of baseline levels in the years of greatest impact. Like the results for employment, the manufacturing sector is eventually estimated to see decreases in output growth because of the production cost increase that outweighs the diminishing impact of positive final demand.

The services sector is estimated to experience the greatest negative employment growth due to the production cost increase due to chrome plating. Production cost increase in general is expected to have a negative impact on the economy and decrease the employment. For example, car service shops and restaurants may see production cost increases of their use of chrome plated products, whose prices are expected to go up. However, these impacts are not expected to exceed 0.01 percent of the baseline levels. The Proposed Amendments also result in a similar pattern of output impacts in the service sector, which experiences the greatest negative impact among all the major sectors. The production cost increase in the chrome plating industry increases the relative cost of production in the services sectors and therefore decreases the output.

4. Please see Master Response 8. The impacts to the statewide employment of the Proposed Amendments are presented in SRIA Table 5.1, Table 5.9, Table 5.11, Table 5.13 and later updated in ISOR Table IX.11. The REMI model simulation showed job increases as well as decreases through the analysis period (2024 through 2043). As shown in the ISOR, staff anticipate small net increases in job growth in 2025 and 2038 due to the increase in final demand in various industries to phase out hexavalent chromium and convert to trivalent chromium. Decreases in employment are seen in other years of the analysis period.

The impacts to the chrome plating industry employment are shown in SRIA Table 5.8, Table 5.10, Table 5.12, Table 5.14, and later updated in ISOR Table IX.14. Under the analysis assuming that no additional decrease in final demand for chrome plating beyond what the REMI model estimates would occur as a response to increased prices, the REMI model estimates a loss of 7 jobs at decorative chrome plating facilities and 196 jobs at functional chrome plating facilities. Under the assumption of a 75 percent decrease in chrome plating demand due to customer acceptance, there would be an estimated loss of 674 jobs at decorative chrome plating facilities and 2,978 jobs at functional chrome plating facilities.

The impacts to the employment by major sectors are illustrated in SRIA Figure 5.1 and Figure 5.2 and later updated in ISOR Figure IX.1. The manufacturing and services sectors are estimated to experience the largest negative impacts among all the major sectors. However, the impact of the Proposed Amendment is not significant when compared to the entire economy.

5. Please see Master Response 8. There may be indirect economic impacts as a result of the Proposed Amendments, including increased demand for certain industries and indirect impacts resulting from costs that are directly borne by chrome plating facilities but are then passed on to other parts of the economy. Staff estimated the total economic impacts, which include the direct, indirect, and induced costs and benefits of the Proposed Amendments, in the macroeconomic analysis section of the SRIA. A description of the industries that may indirectly benefit from the Proposed Amendments are described in Table 5.1 of the SRIA. These are industries that would see increased demand either from the conversion to trivalent chromium, best management practices, building enclosures, or add-on controls.

The trend in employment and output changes by major sectors are illustrated in SRIA Figure 5.1 and Figure 5.2 and later updated in ISOR Figure IX.1. The manufacturing sector is estimated to have the largest negative impacts on job loss in percentage terms, because the chrome plating industry bears most of the direct costs of the Proposed Amendments. The Proposed Amendments are anticipated to increase demand for tanks and replenishment chemistry, and, as a result, the model estimates increased output in the manufacturing sector in 2025 to 2038 by approximately 0.01 percent of baseline levels in the years of greatest impact. For more information regarding impacts to the manufacturing and services sectors, please see the response to number 3, above.

Please see Master Response 9 for a discussion regarding transportation emissions.

6. Please see Master Response 8, which describes the potential employment impacts that were analyzed in the SRIA and updated in the ISOR, as is discussed in the responses above. As discussed in Master Response 13, Environmental Justice advocates have

expressed their concerns that hexavalent chromium should be phased out sooner due to its high cancer potency and no identified safe level of exposure, especially for decorative chrome plating facilities since trivalent chromium is a currently available less toxic alternative.

7. See Master Response 8. Section 6.1.4 of the SRIA document calculates the cost-effectiveness of the Proposed Amendments as \$4.4 million/pound emission. It is important to note that this value does not include fugitive emissions, which are a significant source of concern for communities (see Master Response 12). CARB staff calculated the cost effectiveness of the Proposal Amendments by using the fixed cost amortization and divided by the estimated pound of emissions reduced (not including fugitive emissions). Currently there is no established methodology for CARB to quantify a monetized benefit for reducing cancer risks or noncancer health impacts from toxic air contaminants. In contrast, there are approved methodologies for monetizing noncancer impacts from emissions of PM2.5.
8. As discussed in Master Response 15, the Proposed Amendments require chrome platers to comply with housekeeping requirements, building enclosure requirements, and best management practices, as applicable, which are similar to the requirements of Rule 1469. CARB staff aligned these requirements with the requirements in Rule 1469 so that facilities in SCAQMD's jurisdiction will not have to incur additional expenses to implement these requirements.

Please see Master Response 4. In consideration of industry's concerns, the Board directed staff at the January Board Hearing to provide an alternative pathway that would extend the phase out for decorative chrome plating facilities. As stated in the First 15-Day, the Proposed Amendments provided decorative chrome plating facilities with an optional alternative phase out pathway that would allow them to continue to use hexavalent chromium for three more years beyond the phase out date of January 1, 2027, stated in the 45-Day proposal. Facilities that elect this option are required to comply with building enclosure requirements and cease using hexavalent chromium for decorative chrome plating by January 1, 2030. Because these building enclosure requirements are similar to the building enclosure requirements under Rule 1469, entities in SCAQMD are not expected to have to incur additional costs to implement the building enclosure requirements if they choose to follow the alternative pathway.

Please also see Master Response 8.

9. Please see Master Response 8. As stated on the SRIA and later updated in the ISOR, CARB staff identified three alternatives. Staff qualitatively evaluated all three of the alternatives and quantitatively evaluated two of the alternatives to the Proposed Amendments that meet the requirements under State Administrative Manual (SAM) 6600 pertaining to the analysis of alternatives, which has been codified in the California Code of Regulations, title 1, section 2002(c)(8). The Alternative 2 "No Phase Out" has been quantitatively evaluated in both the SRIA and then updated in the ISOR. Under this alternative, all chrome plating facilities would be required to meet an emission limit instead of phasing out hexavalent chromium. To meet the emission limit requirements of this alternative, staff assumed the chrome plating facilities located in SCAQMD's jurisdiction would use the capital improvement incurred to comply with Rule 1469. This alternative was rejected because it would yield less emissions benefits when compared to

the Proposed Amendments, and without a phase out, communities would continue to be exposed to hexavalent chromium from chrome plating operations.

Comment 13-16:

The resurgent COVID pandemic is further constraining metal finishing operations. Resources are again redirected to protecting the health of our workers. The available workforce has been diminished, presenting another obstacle to our efforts to eventually return to normal operations.

Response 13-16:

Please see Master Response 8. CARB staff recognize that the COVID pandemic had an impact on the economy of California and the United States. However, the State's economy is recovering. CARB regulations cannot be based on unpredictable extraordinary events but must be based on business as usual. In response to industry concerns, CARB staff pushed back the phase out date for decorative chrome plating and functional chrome plating as compared with the Proposed Draft Regulation Language, which was posted on June 2021 (see Master Response 4).

Comment 42-2:

There is no analysis of the costs to other supply chain participants (manufacturers, maintainers, etc...) from changing to the imagined [hard chrome replacement] technology in the SRIA.

Response 42-2:

Please see Master Responses 6 and 8. The analysis of the total economic impact, which include the direct, indirect, and induced cost and benefits of the Proposed Amendments, are included in the macroeconomic analysis section of the SRIA and updated in the ISOR. Staff used the REMI model to obtain the total economic impact by changing the policy variables based on the direct costs and benefits of the Proposed Amendments. Staff entered the production cost increase to chrome plating facilities into the REMI model as well as the increased demand in certain industries in the upper supply chain due to the conversion to trivalent chromium, and costs due to implementation of best management practices, building enclosures, or add-on controls, as applicable. The corresponding changes in demand associated with the actions taken by chrome plating facilities are summarized in SRIA Table 5.1.

The trend in employment and output changes by major sectors, including the indirect impacts to the other supply chain participants, are included in SRIA Figure 5.1 and Figure 5.2. The manufacturing sector is estimated to have the largest negative impacts on jobs loss in percentage terms, because the chrome plating industry bears most of the direct costs of the Proposed Amendments. The services sector is an example of a sector that is indirectly affected. It is estimated to experience the greatest negative employment growth due to the production cost increase of chrome plating. Production cost increase in general will have a negative impact on the economy and decrease the employment. For example, car services shops and restaurants may see production cost increases of their use of chrome plated products, whose prices are expected to go up. However, these impacts do not exceed 0.01 percent of the baseline levels. The Proposed Amendments also result in a similar pattern of

output impacts in the service sector, which experiences the greatest negative impact among all the major sectors. The production cost increase in the chrome plating industry increases the relative cost of production in the services sector and therefore decreases the output.

Comment 105-3:

We overhaul landing gear for the aircraft companies. And we have a – we chrome plate one – in one shop, move it over to the next shop, the machine shop, to get it ground, processed. If we ban hexavalent chrome and we can't do it at that shop, we have to move. We can't do business, because we can't take a part, have it chrome plated in Arizona, ship it back, have it machined. It's not going to work. Our turnaround times will be killed.

So I think that the Board – and you're going to lose a lot of business, because aerospace and defense, and that's going to leave California.

Response 105-3:

Please refer to Master Responses 5 and 8.

The following comments expressed related concerns: 122-1 and 149-3.

Comment 122-1:

This ban will immediately and negatively impact operations for many families-owned small businesses. This ban will present decorative and functional chrome(VI) plating facilities with unreasonable choices, close their operations immediately or those costs will start at the low end of \$375,000 a year to over a million dollars depending on the size of the facility at the closure.

The current cost of the disposal of a thousand gallons of chromic acid bath is \$7,500. This does not include the management of the surrounding support equipment and the processes. When the facility is forced to close, it will cause those hard working Americans to lose their jobs and their family's livelihood or invest significant dollars over three years to comply with the new CARB emission rules and ultimately close their operations on January 1st, 2027, the proposed ban date.

If a facility operator is not properly financial prepared for such an event, the cost will then need to be absorbed by the State Superfund budget, another burdened passed on to the hard working California Americans.

Comment 149-3:

I don't know if the industry will be killed, but there will be multi-shops. It's difficult. We've been in the same location since 1960. For our business, we're not going to be able to move anywhere and stay in business with the same environmental air treatment, water treatment. The facility we have is geared towards our business.

Response 122-1 and 149-3:

Please see Master Response 8. Please refer to Master Response 7 for a discussion of funding available to assist with the transition to alternative technologies. Also, please see Master Response 4, which discusses the changes CARB staff made to provide both decorative and

functional chrome plating facilities additional time to innovate replacements so that they can continue to provide their services and employ staff.

e) Environmental Impacts and Benefits

The following comments expressed related concerns: 59-1 and 85-9.

Comment 59-1:

The California Metals Coalition (CMC) has members that manufacture parts which require them to utilize chromium electroplating and chromic acid anodizing to satisfy customer specifications. Regardless of whether the finish is required to be decorative, or functional, the metal parts must meet the stated testing, engineering and product specs approved by the customer. Eliminating local sources of chromium electroplating and/or acid anodizing in California will break a link in California's manufacturing chain. Currently, parts are manufactured and kept at the same facilities prior to finishing. Without a local source of plating in California, keeping up with customer demand may lead to increased use of warehousing as the parts wait for interstate, or international, metal finishing. California has seen a boom in warehouses, and trucks that carry the products to and from warehouses. This has resulted in an increase in pollution and rulemaking related to warehouse activities. In December 2021, SupplyChainDive published 7 charts show Southern California's warehousing crunch. According to the article, the increase in warehousing has resulted in "Stakeholders are attempting to provide relief in several ways, such as filling parking lots with drop trailers, (and) securing warehouse space outside port markets." CMC questions whether CARB staff has considered the overall increase in congested warehousing, or even the increase in trucking/transportation based on its proposals. This analysis should quantify the pollution from localized warehousing, trucks, trains, planes, or ports—which includes hexavalent chromium.

Comment 85-9:

Banning decorative hexavalent chromium plating in California will cause ... increased truck and rail traffic to ship products in need of decorative hexavalent chromium plating to and from customers in California.

Response 59-1 and 85-9:

Please see Master Responses 5, 6, and 9. Please also see Master Response 1 in the Response to Comments on the Draft EA. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 6-2, 7-2, 9-2, 10-2, 13-2, 17-7, 24-3, 25-4, 34-4, 35-4, 36-4, 40-8, 44-1, 47, 49-2, 59-2, 60-2, 62-3, 78-2, 79-4, 80-3, 84-2, 85-8, 90-3, 97-4, 99-1 101-3, 115-3, 122-2, 126-4, 146-2, 188-1, 189-1, 190-1, 192-1, and 196-1.

Summary of Comment 6-2 et al.:

Many comments state that there will still be consumer demand for hexavalent chromium plated goods even if chrome plating with hexavalent chromium is prohibited in California. These comments noted that customers of chrome plating facilities located in California may choose to find other facilities outside of California to provide this service. Some of the comments noted that chrome plating facilities located in California may choose to ship the items they need chrome plated out of state or out of country if chrome plating with

hexavalent chromium is not available in California. Commenters stated that shipping these items out of state or country would result in more hexavalent chromium emissions from transportation emissions than chrome plating produces under the 2007 ATCM. In addition, commenters noted that other states and countries have less stringent regulations for hexavalent chromium plating facilities and pointed out that these emissions will impact the environment and people in those locations. Commenters note that California is the most responsible place for hexavalent chromium plating because of the strict regulations.

Response 6-2 et al.:

Please see Master Response 9 and Master Response 1 in the Response to Comments on the Draft EA.

Although the Proposed Amendments may result in an increase in out-of-state hexavalent chromium emissions, CARB staff hopes that CARB's lead in reducing the harmful impacts of hexavalent chromium emissions will be followed by other agencies. CARB is charged with the responsibility to protect the health and welfare of Californians. Please also see Master Responses 2 and 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 11-2:

I understand that if Hex Chrome is banned in CA, we could potentially send our parts out of state to be chromed. First, we currently do not ship any parts to chrome; we personally deliver all parts so as not to damage or lose any of these valuable pieces. Many of the parts are hand-made from scratch and have countless hours into their fabrication and manufacture. And many of the parts are very rare, very valuable original pieces that cannot be duplicated or replaced. For this reason, we cannot take the risk of shipping parts and having them damaged or lost.

Response 11-2:

Please see Master Responses 9 and 14. The Proposed Amendments allow chrome plating to continue in California indefinitely using alternative technology and do not require parts to be shipped out of state to be plated. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 40-6, 65, 116-1, and 174-3.

Comment 40-6:

The use of hexavalent chrome provides a hard and durable surface that keeps many machine parts in service longer, thus benefitting the environment by reducing additional manufacturing of new parts.

Comment 65:

Chrome plating is an essential part of manufacturing. Without the benefits of chrome plating and many other "toxic" surface coatings there are a multitude of products whose life would be significantly reduced. The impact of which would have an unmeasurable effect on the environment. The production of raw materials used in the manufacturing of everyday items and the tooling used to make these items would increase dramatically. The idea of banning chrome plating to improve on air quality or for other environmental reasons is completely backwards. Before making such drastic decisions, we should look at the direct and indirect

consequences they will have. There are far too many industries that rely on surface coatings like chrome plating.

Comment 116-1:

My plating services help promote the long life of parts. We help prevent corrosion. We make parts harder, make them – help stay longer in life, so we are – we are definitely the ultimate environmentalists is what we do.

Comment 174-3:

As Sylvia mentioned earlier without work like ours, many, many more parts would have to be manufactured on a regular basis leading to great and greater air pollution.

Response 40-6, 65, 116-1 and 174-3:

Thank you for your comment and input. Please see Master Responses 2 and 6. Trivalent chromium is a currently available alternative to hexavalent chromium in decorative chrome plating and is already being used effectively by decorative plating facilities. For functional chrome plating applications, please see Master Response 5 for a discussion of the technology reviews CARB staff included in the Proposed Amendments to address concerns about the availability of suitable alternatives for functional applications.

The following comments expressed related concerns: 1, 3, 15-3, 46-5, 77, and 85-10.

Summary of Comment 1 et al.:

These comments note that the CARB states in the ISOR that “an additional co-benefit of the proposed phase out is the elimination of perfluoroalkyl and polyfluoroalkyl substances (PFAS/PFOS) contained in the fume suppressants used in chrome plating operations.” Commenters state PFAS fume suppressants are being used legally and may be required by air permits. Commenters also note that many chrome plating facilities do not use PFAS/PFOS fume suppressants or are proactively transitioning to non-PFAS fume suppressants because of existing and in-development rules that ban the use of PFAS. These comments state that banning hexavalent chromium plating and anodizing processes is not an effective way to address PFAS issues for the surface finishing industry.

Response 1 et al.:

CARB staff appreciates industry efforts to transition to non-PFAS fume suppressants. As indicated in the ISOR, the elimination of PFAS containing fume suppressants is identified as a co-benefit and was not the purpose of the Proposed Amendments. Although the hexavalent chromium plating process can employ the use of fume suppressants, the trivalent chromium plating process does not require the use of any fume suppressants. Fume suppressants that contain PFAS are not expected to be used following the phase out because trivalent chromium plating uses wetting agents that do not contain PFAS. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 102-2, 126-6, and 136-1.

Summary of Comments 102-2, 126-6, and 136-1:

These comments state that schools and communities have been built around the chrome plating industry.

Comment 102-2:

The last thing I'd say is I find it disingenuous showing where all these sites are. Most of these plating facilities, as Frank suggested, were there for over 100 years. These schools and other communities moved in after these plating facilities. Los Angeles was once a proud manufacturing base as was Orange County, and the central parts of these cities manufactured and utilized this chemistry. Everything else was built around it.

Comment 126-6:

I'd like to know where the accountability is with you people, with our other government entities that build the neighborhoods around these facilities, not that these facilities were built in these neighborhoods.

Comment 136-1:

We as metal finishers are more than an industry. We are part of all communities. Communities have been built around industries in general. Some of our employees are neighbors to our facilities. Our industry has employed thousands of workers who have committed their lives to our metal finishing industry, because we are passionate about what we do and need to support our families.

Response 102-2, 126-6, and 136-1:

Please see Master Response 14. CARB staff recognize that some of the chrome plating facilities that are subject to the Proposed Amendments may have been established prior to the construction of nearby residential neighborhoods or schools. However, this is the result of decisions made by land use agencies over time. In some cases, those land use agencies may not have been aware of the potential harm that could result from placing residences and schools close to these chrome plating facilities. However, regardless of how this came to be, there are chrome plating facilities located close to residences, as the commentor in comment 136-1 points out, and to schools. Please see Master Responses 2 and 3. CARB staff made no changes to the Proposed Amendments based on the received comments.

f) Emissions

The following comments expressed related concerns: 4-2, 6-3, 7-3, 8-1, 11-4, 12-2, 13-7, 15-4, 16-1, 17-1, 24-1, 25-3, 27-1, 34-1, 35-2, 36-2, 37, 40-3, 45, 54-1, 63-4, 74-1, 76-2, 85-2, 87, 98-2, 101-4, 103-1, 114-2, and 115-6.

Summary of Comment 4-2 et al.:

Many comments state that decorative and functional chrome plating, and chromic acid anodizing facilities produce less than 1% of the hexavalent chromium that is emitted statewide. Commenters note that if chrome plating facilities discontinue plating with hexavalent chromium, over 99% of the statewide hexavalent chromium emissions will remain due to transportation, shipping, concrete, and other industry. Some of these commenters note that, based on CARB's 2018-2019 annual emissions report, all California decorative chrome plating facilities emitted less hexavalent chromium, at 0.00856 lbs per year, than the popular theme park in Anaheim, CA, at 0.106 lbs per year. These commenters do not understand why the use of hexavalent chromium is being phased out for an industry that is already heavily regulated and produces less than 1% of the statewide hexavalent chromium

emissions and suggest that CARB focus on regulating the larger sources of hexavalent chromium.

Response 4-2 et al:

Please refer to Master Responses 2, 3, 6, 12, and 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 6-8, 14-5, 22-2, 24-5, 60-5, 115-5, and 126-2.

Summary of Comment 6-8 et al.:

Many comments state that decorative and functional chrome plating and chromic acid anodizing use the same hexavalent chromium chemistry. These comments note that decorative chrome plating facilities operate fewer ampere-hours annually and therefore produce less hexavalent chromium emissions when compared to functional chrome and chromic acid anodizing facilities. Commenters do not understand why decorative chrome plating facilities will be prohibited from using hexavalent chromium before functional chrome plating facilities and chromic acid anodizing facilities.

Response 6-8 et al.:

Please refer to Master Response 10. In response to industry concerns about the phase out date in decorative chrome plating, staff amended the Proposed Amendments to provide additional time prior to the phase out. Please refer to the discussion regarding extensions to the decorative chrome plating phase out in Master Response 4.

Comment 13-14:

1. SCAQMD approved its latest iteration of Rule 1469 in 2018 and it contains several provisions that differ from the Draft Chrome ATCM but provide significant hexavalent chromium emissions reductions.
2. Has CARB been provided by SCAQMD with the 1469 compliance costs incurred by the regulated MFs?
3. Has CARB done a direct comparison on hexavalent chromium emissions saved between Rule 1469 (if applied statewide) and the Draft Chrome ATCM? Has such a comparison been used as one of the alternatives for the economic analysis?
4. Can CARB demonstrate that the Draft Chrome ATCM will achieve greater reductions than Rule 1469 applied statewide?
5. Has CARB considered specific measures addressing amp-hours, enclosures, filtration, covers, or other actions to effectively reduce emissions, as alternatives to a total ban?

Response 13-14:

Please see Master Responses 8. Staff did not specifically compare emission reductions due to the two rules. However, staff analyzed two alternatives in the SRIA and compared them with the Proposed Amendments, as required by Government Code section 11346.2(b). The ISOR analyzed three alternatives. Although none of the alternatives were identical to Rule 1469, the no phase out alternative analyzed in the SRIA and the ISOR included requirements similar to those in Rule 1469, including housekeeping requirements, best management practices,

building enclosure requirements, and add-on controls, and analyzed the costs associated with these requirements in comparison to the Proposed Amendments.

Please see Master Response 15. The Proposed Amendments will achieve greater reductions than Rule 1469 applied statewide because the phase out reduces hexavalent chromium emissions from the chrome plating industry to zero. CARB considered a variety of emission control measures when developing the Proposed Amendments. As discussed in Master Response 2, the Proposed Amendments provide additional time prior to the phase out and require housekeeping practices, best management practices, and building enclosures to reduce fugitive emissions in the interim prior to the phase out.

Please also see Master Responses 2, 6, 12, and 14.

The following comments expressed related concerns: 6-1, 22-3, 27-2, 29-2, 38-1, 62-5, 85-7, 98-3, 104-1, 105-2, 106-1, 109-2, 110-1, 112-1, 115-1, 118-1, 124, 136-3, 144-2, and 157-1.

Summary of Comment 6-1 et al.:

Commenters that are associated with chrome plating facilities state that add-on air pollution control devices, such as HEPA filters and air scrubbers, effectively reduce the hexavalent chromium emissions leaving chrome plating facilities. These commenters state that with add-on air pollution control devices, hexavalent chromium emissions measured at chrome plating facilities are zero detectable or extremely low. In addition, commenters note that chrome plating facilities adhere to permits and regulations, and argue that, because of this, hexavalent chromium should not be phased out of chrome plating operations.

Response 6-1 et al.:

Please see Master Responses 2, 11, 12, 14, and 15. While there are some steps that can be taken to reduce fugitive emissions, those steps are also not sufficient to eliminate them entirely. CARB staff notes that non-detects or non-detects reported as zero values do not necessarily mean zero emissions. Rather, it is common practice to assume that, in the case of a non-detect, the value of the concentration is equal to half of the detection limit of the instrument. For example, a method detection limit of 0.04 ng/m³ would be presented as half of that, or 0.02 ng/m³, which equates to a cancer risk of approximately 7 chances per million.

In consideration of industry concerns, CARB staff extended the phase out dates and included requirements such as those mentioned by commenters to reduce emissions in the interim prior to the applicable phase out (see Master Responses 4 and 15).

The following comments expressed related concerns: 25-1, 72, 86, 91-1, 93, and 137-1.

Comment 25-1 and 86:

I would like for the board to look at decorative platers emissions and clearly state why we are being targeted for elimination in California when we are already highly regulated and have zero threat to public safety when operating under current ATCM.

I will publicly post my emissions for the 2022 year with data to prove that shops like mine are not the problem and should not be required to transition to trivalent or close down operations.

2022 I used 31,322 amp/hrs at a source test rating of 0.00032

The math is $31,322 \times 0.00032 = 10.02304$ milligrams for all of 2022.

To put this in perspective a paperclip = 1 gram.

It would take my facility 100 years at these rates to produce 1 gram of chrome, a paperclip worth! Can you see how ridiculous this is? you have the ability to look at true data on emissions in the industry and the facts speak for themselves.

Before any decision on a new ATCM is reached the board really needs to look at facts, the overwhelming majority of platers all have amp/hr meters and source test documentation that proves the chrome plating industry as a whole is not the problem with hexavalent chrome emissions.

Comment 86:

Annual emissions are 0.000022097 lbs or 1/100th of a gram.

Comment 72 and 93:

I wanted to send you proof of the effectiveness of source controls when it comes to hexavalent chromium emissions. I have attached the Excel version to make it easy for your team to check formulas.

The South Coast AQMD monitored our facility fence line to fence line for 9 months. The attached data was pulled from their website. The fence line monitors were within 20 feet of our buildings, and our chromic acid anodize tank and spray booths were directly in between, as the prevailing winds blow. And the winds off of the ocean are fairly predictable. EME, Inc. was one of the first, if not the first, to place pollution controls on our chromic acid tank. That tank and the paint booths are fitted with HEPA filtration.

Note that the difference between the monitors is 0.00 nanograms when the one significantly test result is thrown out (it is less than a quarter of a nanogram even with that anomaly). The fact that there are low amounts of hexavalent chromium in the monitors at most times is because the Alameda Train Corridor and Alameda Ave (a large thoroughfare) are just downwind from our facility.

Bans are not the way to go! When it comes to hexavalent chromium, source controls have done the job effectively for years.

AQMD Monitoring – EME in Compton – Sites 4C and 5C

Date	Upwind	Downwind	Difference	Notes
Monday, June 12, 2017	0.1			
Thursday, June 15, 2017	0.17	0.24	0.07	
Sunday, June 18, 2017	0.28	0.04	-0.24	
Wednesday, June 21, 2017	0.48	0.11	-0.37	
Saturday, June 24, 2017	0.11	0.14	0.03	
Tuesday, June 27, 2017	0.23	0.26	0.03	
Friday, June 30, 2017	0.09	0.14	0.05	
Monday, July 3, 2017	0.86	0.49	-0.37	
Thursday, July 6, 2017	0.78	0.33	-0.45	
Sunday, July 9, 2017	1.37	1.32	-0.05	
Tuesday, July 11, 2017	0.72	1.09	0.37	
Saturday, July 15, 2017	0.18	0.27	0.09	

Date	Upwind	Downwind	Difference	Notes
Tuesday, July 18, 2017	0.58	0.18	-0.4	
Friday, July 21, 2017	0.88	0.17	-0.71	
Monday, July 24, 2017	0.08	0.22	0.14	
Thursday, July 27, 2017	0.87	1.13	0.26	
Sunday, July 30, 2017	0.06	0.71	0.65	Sunday - no work done
Wednesday, August 2, 2017	0.11	0.14	0.03	
Saturday, August 5, 2017	0.04	0.06	0.02	
Tuesday, August 8, 2017	0.11	0.27	0.16	
Friday, August 11, 2017	0.24	0.2	-0.04	
Monday, August 14, 2017	0.14	0.15	0.01	
Thursday, August 17, 2017	0.34	0.38	0.04	
Sunday, August 20, 2017	0.19	0.27	0.08	
Wednesday, August 23, 2017	0.1	0.55	0.45	Welding of Fence Across the Street
Saturday, August 26, 2017	0.17	0.16	-0.01	
Tuesday, August 29, 2017	0.11	0.09	-0.02	
Friday, September 1, 2017	0.74	0.29	-0.45	
Monday, September 4, 2017	0.09	0.06	-0.03	
Thursday, September 7, 2017	0.2	0.23	0.03	
Sunday, September 10, 2017	0.06	0.06	0	
Wednesday, September 13, 2017	0.11	0.29	0.18	
Saturday, September 16, 2017	0.13	0.16	0.03	
Tuesday, September 19, 2017	0.13	0.09	-0.04	
Friday, September 22, 2017	0.2	0.14	-0.06	
Monday, September 25, 2017	0.44	0.44	0	
Thursday, September 28, 2017	0.19	0.29	0.1	
Sunday, October 1, 2017	0.03	0.04	0.01	
Wednesday, October 4, 2017	0.36	0.31	-0.05	
Saturday, October 7, 2017	0.17	0.27	0.1	
Tuesday, October 10, 2017	7.18			Sampling Filter Tore
Friday, October 13, 2017	0.23	0.22	-0.01	
Monday, October 16, 2017	0.61	0.64	0.03	
Thursday, October 19, 2017	0.11	0.2	0.09	
Sunday, October 22, 2017	0.11	0.31	0.2	
Wednesday, October 25, 2017	4.69	23.64	18.95	ANOMALY??? 103° Day
Saturday, October 28, 2017	0.07	0.09	0.02	
Tuesday, October 31, 2017	0.14	0.09	-0.05	
Friday, November 3, 2017	0.12	0.33	0.21	
Monday, November 6, 2017	0.12	0.95	0.83	
Thursday, November 9, 2017	1.62	1.11	-0.51	
Sunday, November 12, 2017	0.14	0.17	0.03	
Wednesday, November 15, 2017	1.68	0.68	-1	
Saturday, November 18, 2017	1.46	1.08	-0.38	
Tuesday, November 21, 2017	1.42	1.2	-0.22	

Date	Upwind	Downwind	Difference	Notes
Friday, November 24, 2017	0.13	0.1	-0.03	
Monday, November 27, 2017	0.64	0.23	-0.41	
Thursday, November 30, 2017	0.45	0.64	0.19	
Sunday, December 3, 2017	0.08	0.06	-0.02	
Wednesday, December 6, 2017	1.84	1.42	-0.42	
Saturday, December 9, 2017	0.85	0.69	-0.16	
Tuesday, December 12, 2017	3.57	3.05	-0.52	
Friday, December 15, 2017	1.33	1.32	-0.01	
Monday, December 18, 2017	0.5	0.45	-0.05	
Thursday, December 21, 2017	0.37	0.58	0.21	
Wednesday, December 27, 2017	1.19	0.28	-0.91	
Saturday, December 30, 2017	0.07	0.14	0.07	
Tuesday, January 2, 2018	0.21	0.35	0.14	
Friday, January 5, 2018	0.25	0.47	0.22	
Monday, January 8, 2018	1.12	0.15	-0.97	
Thursday, January 11, 2018	0.32	6.21	5.89	
Sunday, January 14, 2018	0.11	0.09	-0.02	
Wednesday, January 17, 2018	1.77	0.78	-0.99	
Saturday, January 20, 2018		3.03		Very High Winds
Tuesday, January 23, 2018		2.5		Upwind of 1.73 Was Later Deleted
Friday, January 26, 2018		0.85		Mulfuction - 3rd in a Row
Monday, January 29, 2018	0.96	0.81	-0.15	
Thursday, February 1, 2018	0.78	0.21	-0.57	
Sunday, February 4, 2018	0.95	0.67	-0.28	
Wednesday, February 7, 2018	0.62	1.92	1.3	
Saturday, February 10, 2018	0.1	0.06	-0.04	
Tuesday, February 13, 2018	1.28	0.12	-1.16	
Friday, February 16, 2018	1.28	0.65	-0.63	
Monday, February 19, 2018	0.36	1.05	0.69	High Wind Day
Thursday, February 22, 2018	0.31	0.18	-0.13	
Sunday, February 25, 2018	0.15	0.07	-0.08	
Average in Nanograms	0.57	0.81	0.23	
Average (without the Anomaly)	0.52	0.52	0	

Comment 137-1:

Current source control technology works and it works incredibly well. So let's talk about the source controls. Our company placed air suction HEPA filtration on its large chromic tank 25 years ago, way ahead. We worked with AQMD to write the original rule, years and years ago when they didn't know a darn thing. And we -- I submit to you, that AQMD placed fence monitoring five years ago right on each side of that tank. It was perfectly placed. The wind is consistent offshore and predictable and they caught it right in between. That testing I submitted to you. It's part of the record. We have HEPA stacks right there in the middle, two monitors. Results, 0.00 nanograms. That obviously includes fugitive, because everything is going to be caught by those monitors. These things work. I don't know why we don't care.

0.00 nanograms per cubic meter. I mean, that's -- I mean, I don't know how much closer to zero you get than averaging 0.00.

Comment 91-1:

I am the facility manager of King Industrial Hard Chrome located in Fresno, CA. We are a small company with only 2 employees, but the work that these two employees process affects the whole world including you if you own anything made with cotton. That's what we do is manufacture and Chrome plate cotton picker spindles. We sell and ship these parts all over the world to be used in cotton pickers.

We utilize closed tanks with merlin covers and edd filters and our emissions are far lower than the current regulations require. The current regulations limit our emissions to be lower .015mg per amp hour. Our tanks actual emissions are 0.0000058 m/g per amp hour. Our facility total emissions for last year were 12.46 mg our total limit allowed is 18,000mg.

Response 25-1, 72, 86, 91-1, 93, and 137-1:

Please see Master Responses 1, 2, 11, 12, 14, and 15. In response to the commenter's point, "Results, 0.00 nanograms. That obviously includes fugitive, because everything is going to be caught by those monitors," staff notes that non-detects or non-detects reported as zero values do not necessarily mean zero emissions. Rather, it is common practice to assume that, in the case of a non-detect, the value of the concentration is equal to half of the detection limit of the instrument. For example, a method detection limit of 0.04 ng/m³ would be presented as half of that, or 0.02 ng/m³, which equates to a cancer risk of approximately 7 chances per million.

The Proposed Amendments are designed to control, and eventually eliminate, emissions from all chrome plating facilities throughout California. Hexavalent chromium is extremely toxic, and even a small amount can have serious effects on human health. Although the emissions of hexavalent chromium from some chrome plating facilities may be small, many of these facilities are located in close proximity to homes and sensitive receptors, such as schools and daycare facilities, and many are located within disadvantaged communities. In addition, source tests measure emissions coming from the stack of the facility. Fugitive emissions, which exit the building through roof vents, window, doors, and other building openings, are not included in the source test results. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 73:

Considering that CARB is expert in pollution control methods and chrome platers are experts in chrome plating, how is it possible for CARB to imagine that a replacement technology for hard hexavalent chrome plating will emerge by 2039, but CARB is not able to imagine an improvement in hex chrome pollution control methods over the same period? Only a ban will suffice.

By virtue of this non-emission-based proposal, CARB has explicitly assumed that they will make no improvements in pollution control methods for the next 16 years.

Response 73:

CARB staff welcome information regarding improved pollution control methods and would consider this information in conducting the technology reviews required by the Proposed

Amendments (see Master Response 5). CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 39-1 and 74-2.

Comment 39-1:

This ATCM imposes a ban on hex chrome use for hard chrome plating even though there is not an alternative. Since the ban is imposed even though hard chrome platers do use state of the art HEPA filtration systems, CARB is establishing a precedent that HEPA filtration systems are inadequate for management of carcinogens. This has major implications for not only hex chrome, but for nearly all the other air toxics in California. CARB would be saying that HEPA filtration is no longer the Best Available Control Technology. A ban would now be the best available control technology.

But HEPA filters are effective for control of hex chrome as evidenced by all the other CARB and district rules which require use of HEPA enclosures and booths and which have not been proposed to be revised. There is a long list.

Comment 74-2:

Imagine that the CARB Board approves this non-emission based ATCM ... CARB will now be in a position wherein they have discredited the best available control technologies for dealing with Hex Chrome. HEPA filtration isn't adequate anymore.

Response 39-1 and 74-2:

CARB acknowledges the effectiveness of control technologies, such as HEPA filters, at reducing stack emissions of hexavalent chromium. Unfortunately, CARB staff is not aware of any control technology that can achieve a zero-emission limit in practice. Even if a control technology were able to reduce stack emissions to zero, fugitive emissions would still be able to escape into surrounding communities through vents, doors, and other openings. Please see Master Responses 2 and 15. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 85-3:

Based on CARB's own data, only 2.348 pounds of hexavalent chromium are emitted annually from chromium plating and anodizing operations in California. This estimate is conservative because it is based on facility amp hours and the permissible emissions from each process. Actual emissions are lower because facilities must operate well below permissible emission limits to ensure ongoing compliance with the regulatory standard.

Response 85-3:

Please see Master Responses 1-3 and 11. The values in the emission inventory do not include fugitive emissions, which are a significant concern to communities. Please also see Master Response 2. Although the emissions of hexavalent chromium from some chrome plating facilities may appear small, hexavalent chromium is extremely toxic, and it only takes a small amount to have serious effects on human health. Additionally, many of these facilities are located in close proximity to homes and sensitive receptors, such as schools and daycare facilities, and in disadvantaged communities. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 85-4:

On January 1, 2039 the ban on hard hexavalent chromium plating and chromic acid anodizing operations is scheduled to take effect, assuming non-hexavalent chromium alternatives are available to replace all applications of these processes. Based on some of the critical applications for these processes such as defense, aerospace, hydraulics, and heavy equipment, viable non-hexavalent chromium alternatives to these processes may not be available by 2039 due military, aerospace and customer specifications to address critical safety and performance criteria. To project any hexavalent chromium emission reductions in fifteen years as a result of the ban is purely speculative at this point. Accordingly, the only significant reductions of hexavalent chromium emissions that can reasonably be counted upon would be based on an emissions-based rule requirement, not bans.

Response 85-4:

Please see Master Responses 5 and 11.

CARB staff disagree with the commentor's assertion that: "Accordingly, the only significant reductions of hexavalent chromium emissions that can reasonably be counted upon would be based on an emissions-based rule requirement, not bans." CARB staff appropriately assume that the Proposed Amendments will achieve a 100 percent reduction of hexavalent chromium from chrome plating operations due to the phase out. If the technology reviews show that alternative technology will not be available by the 2039 phase out, the ATCM can be amended by adjusting the dates or the specific requirements of the phase out, and the emissions reductions would be recalculated accordingly. Notably, a manufacturer of trivalent chromium is now working on products plated for the defense sector where it was previously stated by industry that doing so was not possible. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 127-1:

You know, this new report that published 2019, the application new generation of air monitoring methods of Southern California based and prepared for AQMD along with Montana State University. You know, they've got this very expensive, very nice van that drives around -- that drove around for 30 days. It talks about rail. It talks about monitoring foundries, metal finishing, cement hot spots when all the Paramount thing was going on and they found nothing. And you know, in that time, you know, we were doing air monitoring -- or they were doing air monitoring in facilities' fence line. The chrome coming onto the facility was higher than the chrome exiting. You know, looking at the wind rose and all that good stuff. You know, that being said, you know, we're throwing away decades of work that AQMD has done in understanding the metal finishing, instead of capitalizing and expanding that. I think we're missing a huge opportunity here. I've had the opportunity to go to other shops across the country and I ask them about environmental controls and inspections. For years, nobody comes in. Every three months they come into my shop. They understand the process. They know what to look for, making us better at what we do.

Response 127-1:

The commentor seems to be stating that air monitoring was recently conducted that showed reductions in emissions and that those reductions are the result of the adoption of Rule 1469

in the SCAQMD. Please see Master Responses 2 and 15. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 174-2:

We have no fugitive -- fugitive emissions. We test regularly for our employees and have proven on many occasions, there's no fugitive emissions in our shop.

Comment 174-2:

CARB staff would be happy to review the results of any studies or testing that the commentor has that substantiate the commentor's assertions. As discussed in Master Response 12, fugitive emissions have been identified as a significant source of concern for communities near chrome plating facilities and can cause a significant impact on public health. Please also see Master Response 2. CARB staff made no changes to the Proposed Amendments based on the received comments.

g) Emissions Inventory

Comment 13-9:

A. Based on Presentation #5 RTC

1. Based on CARB staff comments at Workshop #5, we understand that CARB has identified 141 metal finishers ("MFs") statewide. Were all these facilities identified as part of CARB's survey?
2. Has CARB identified any MFs that are not part of its survey? Is CARB making assumptions on the existence of MFs? Has CARB verified the 141 MFs?
3. Based on CARB staff comments at Workshop #5, we understand that CARB has identified 110 (of a total of 141) MFs within the jurisdiction of the South Coast Air Quality Management District ("SCAQMD"). Of the remaining 31 facilities, how many MFs are located in the San Diego area? How many MFs are in the San Joaquin Air Pollution Control District. Is there a list showing the number of facilities per each air pollution control district?
4. Is CARB assuming some MFs have not been identified? Is CARB assuming emissions data for MFs with unknown actual emissions? If so to either or both or the prior questions, how is CARB determining the number of MFs not being reported or with unknown actuals?
5. Has CARB determined and distinguished chromium emissions based on type of use (decorative, hard chrome, anodizing)?
6. If yes to question 4, how is CARB determining the type of MFs not being reported or with unknown actuals? (decorative, hard chrome, anodizing)?

B. Based on Presentation #4 RTC

In Workshop Presentation #4, CARB stated

The original 3 lb of emissions is attributed to 80% of the facilities in the inventory for which CARB has actual emissions data." Then CARB assumed "The last 1 lb comes from

applying the same ratio of actual to potential emissions for the 20% of facilities with unknown actuals.

1. If 80% = 3 lbs, then why shouldn't 20% = $\frac{1}{4}$ of 3 lbs or 0.75 lbs? How was the 1 lb calculated by CARB staff and why wasn't 0.75 lbs the result? What were the assumptions employed by CARB staff to reach its conclusion? Are the 3 lb and 80% values in the statement exact or only approximations? If approximations, what are the actual values?
2. How is the 3 lbs figure calculated? Did CARB base this number using the current year emissions or is it based on an average of more than one year? If it was based on the most current data, did that calculation include emissions taken from different years?
3. How many California MFs exceed 15 grams hexavalent chromium per year in emissions? How many MFs exceed one pound?
4. What is the highest emitting amount (in pounds or grams) for a MF in the CARB database? From what year is this highest emitting amount derived? In what air district is this highest amount located?
5. Has the emissions difference for hexavalent chromium been determined for pre- and post-SCAQMD Rule 1469 ("1469") implementation?
6. Have the emissions data used by CARB been audited for accuracy? Is it coming from the air districts? Are the data sources similar? Is the data directly comparable or does it require further manipulation?
7. How do the current emissions compare between MFs in the SCAQMD (where 1469 applies) and the rest of California?
8. Are the values for assumed emissions derived solely from agency-derived default values and source tests? Is CARB using existing ATCM source emissions limits (from Table 92107.4) and multiplying them against the amp-hours per facility?
9. How are the default values for emissions calculations determined generally? Are they averaged or assume worst-case? Are margins of safety explicitly or impliedly used in the default values?
10. Source tests are conducted by applying maximum amperage for prolonged periods. How does this worst-case use compare to real-world use at lower amperages over shorter periods of time?
11. Is there an assumed margin of safety resulting from the source test process and results? Are hexavalent chromium emissions results using source test data overly conservative?
12. How many facilities have conducted source tests? Is there a list of facilities per air district? Has CARB used this information in making its calculations for statewide MF hexavalent chromium emissions?

In Workshop Presentation #4, CARB stated:

Surface plating makes up less than 1% of hex chromium emissions nationally. Response – This number comes from the 2005 National Emission Inventory. CARB staff reviewed

the 2017 National Emission Inventory which seems to agree with 2005 estimates. However, the inventory only lists ~1/2 of known chrome platers in California.”

13. Does the response above mean that CARB now assumes surface plating in California would be double that amount and therefore surface plating makes up less than 2% of California’s hexavalent chromium emissions? If not, then explain.
14. Is it possible there are equivalent other unlisted users and hexavalent chromium emitters (non-California MFs) not accounted for in the survey and located in the other 49 states?
15. Have you been able to determine the general accuracy of the survey as being consistent across all usages and jurisdictions?
16. What is the exact percentage of known MFs identified as “~1/2”? Are CARB’s known chrome platers the 141 identified by CARB staff?
17. Has there been a comparison of the MFs on the inventory list with CARB’s known chrome platers to determine the emissions differences? Are the unlisted MFs known to CARB smaller or larger emitters compared to the listed parties?
18. Has there been an evaluation of the types of operations identified on the CARB inventory versus the MFs on the inventory list?
19. What are the other emissions sources comprising the remainder (98-99%) of the hexavalent chromium emissions? What does each other source emit by pounds and percentage?
20. How much of this remaining 98-99% can be regulated by CARB? What are the overall impacts to local communities affected by environmental justice from these sources CARB cannot regulate?

Response 13-9:

This comment references presentations from Workshops 4 and 5. Since the time those workshops were held, CARB staff have updated the facility inventory based on data received from Districts and published the Initial Statement of Reasons (ISOR) for the Proposed Amendments for the commentor, industry, and public to review. Please see the following documents for the details requested in this comment: for questions about the chrome plating facilities identified through CARB’s 2018 survey, please see the Executive Summary and Section I.(M) of the ISOR. For questions related to the emissions inventory, please see Master Response 11, ISOR Section VI., and the Second 15-Day Notice. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 13-11:

The Air Toxics “Hot Spots” Information and Assessment Act of 1987 was developed to identify and assess air toxics data, including hexavalent chromium. Facilities subject to the law are required to inventory and, in some cases, model their emissions for potential risk. Where required, facilities must reduce their airborne toxic risk.

1. Has CARB reviewed all Toxic Hot Spots inventories in the state as part of the development of the Draft Chrome ATCM? If so, have the hexavalent chromium emitters been identified generally?

2. Has CARB identified MFs specifically in reviewing the Toxic Hot Spots inventory? If so, have any of the MFs been required to model their risk? Have any MFs been required to reduce their airborne toxic risk?
3. Have these reports and considerations been accounted for as part of the evaluation for Environmental Justice?

Response 13-11:

Please see Master Responses 1 and 11. CARB staff reviewed data from a variety of sources, including Hot Spots, to ensure the Proposed Amendments were drafted considering the best data available to staff. Emissions inventory reporting under the Hot Spots Program is maintained in California Emissions Inventory Data Analysis and Reporting System (CEIDARS). CARB staff repeatedly asked industry, including the Metal Finishers Association (MFA), to provide more complete and updated information. Unfortunately, industry did not provide substantiated data that CARB could verify for use in the emission inventory. However, in the absence of data from MFA or its members CARB staff was able to obtain some updated inventory information from the Districts.

Under the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Hot Spots Program), chrome plating facilities are required to report their emissions of hexavalent chromium. Facilities that are deemed high priority by the District are required to conduct a health risk assessment (HRA). If facilities exceed certain significance levels, they are required to reduce those risks. Many facility HRAs under the Hot Spots Program were conducted prior to OEHHA's 2015 guidelines updates, which added protections to children. Therefore, HRAs conducted prior to these updates would underestimate the health impacts. Additionally, these HRAs would not contain updated emissions inventory information. Risk reduction audit and plans are available from the Districts. CARB staff did not evaluate the status of all chrome plating facilities in the Hot Spots Program to determine which facilities were required to reduce their risks under that program. Please see Master Response 14.

It is not clear what the commentor means by "...the evaluation for Environmental Justice?". However, it seems that the commentor is referring to the classification of a community as disadvantaged. That classification is based on the community's score in CalEnviroScreen. The CalEnviroScreen score is based on a series of indicators which are measures of either environmental conditions, burden indicators, or health and vulnerability factors for population characteristic indicators. The classification of a community as disadvantaged is not a function of exposure to one specific pollutant but is based on measurements of different types of pollution that people in the community are exposed to. The emissions from chrome plating facilities are accounted for in the CalEnviroScreen model.

Comment 15-1:

I submitted the text below addressed to the CARB Board, CARB staff, and the California Department of Finance on June 26, 2022. In the email, I refer to actual emissions of 2.2 pounds which is the amount of actual emissions referenced in the SRIA. However, the latest CARB document (Appendix B) on this website now shows that actual emissions are 0.9 pounds annually. CARB's numbers don't match. Hmmm. Actual emissions have dropped by more than half since June? I guess this just weakens CARB's case all the more. An analysis based on actual experience would show even less emission reduction. Is this SRIA even a

viable document anymore? At what point in this regulatory process does the State stop the presses to validate the basic data from which economic assessments are made?

TEXT FROM EMAIL OF JUNE 26, 2022 FOLLOWS

The most important number in the Chrome ATCM SRIA is 2.2 pounds. You can find it in Table 2.1 on page 21 of the SRIA. Go look at it. It is important. The total pre-pandemic hexavalent chrome emissions from chrome platers in California is 2.2 pounds annually. A fact – 2.2 pounds annually.

The most revealing number in the Chrome ATCM SRIA is 132 pounds. You can find this number on the top of page 2. It is the purpose for the rule. According to the SRIA, rule adoption will eliminate 132 pounds over 20 years. That is an average of 6.6 pounds per year. From a starting point of 2.2 pounds. It bears repeating. The new rule will eliminate 6.6 pounds per year from the currently emitted total of 2.2 pounds per year. There would be no chrome platers after 2039 so emissions will be 0.0 pounds. Sacramento math is exposed. Specifically ($2.2 - 6.6 = 0.0$). Remember, the Chrome ATCM SRIA is a combined product of the California Air Resources Board and the California Department of Finance and yet it implicates the California Department of Education.

It is not a co-incidence that CARB and the California Department of Finance separate these two numbers, the big flashy benefit savings on page 2 and the actual emissions on page 21. The key to big savings results are big baseline assumptions. Section 1.6 and the footnotes in Table 2.1 describe the method and assumptions for establishing the baseline. The inflated baseline is justified in the following ways:

They create the concept of “potential” emissions. These are emissions that facilities could make, at the discretion of the facility, which are not currently prohibited by permit throughput limits. You are led to believe chrome emissions will, or could, go up to this level, but that is not a good assumption. Experience shows us that chrome plating emissions have done nothing but decline in California for decades. They assume that pollution control equipment operates at no better than the permit efficiency level or lacking pollution control equipment, that facilities are emitting the maximum.

They created a magnification factor to account for data they did not collect from all facilities, and they chose the highest “at limit” assumption about that data.

Finally, they added a disclaimer, “Using emission limits may overestimate actual emissions at some facilities”. A more accurate statement could have been “Using emission limits does overestimate actual emissions at facilities in aggregate” and they did do exactly that.

The result of this creativity is a baseline of 10.19 pounds per year if you read page 15 and 10.15 pounds per year if you look at Table 21. We could question the discrepancy between 10.19 and 10.15 but we will move on because there is something more important that you should be aware of. At the beginning of this email, we talked about 6.6 pounds per year of savings. That number is derived because the rule doesn’t eliminate hex chrome until 2039 so it is an average over 20 years. Beginning in 2039, at elimination, the benefit is $10.15/10.19$ pounds per year. So, the Sacramento math is even worse ($2.20 - 10.19 = 0.00$).

Let’s get back to discussing the baseline assumptions - the “potential” emissions and “(in)efficiency” of pollution control devices. Chrome platers deserve some credit. They do currently operate within limits and are choosing to operate with a margin of safety below the

limit. They do this to assure complete compliance. “Potential” emissions are foregone in order to assure compliance and are already achieved. Additionally, many chrome platers have invested in expensive pollution control equipment which operates at a higher efficiency than required by rule limits.

Assuming inefficiency equal to the rule limit is not valid – especially in view of source test data in the possession of regulators that is referenced in the SRIA. So, the baseline is arbitrarily high. It assumes both these factors do not already exist. But they do. Emissions have already been reduced by the chrome plating industry. As a result of improvements in Rule 1469, there is not a need for additional regulation. This is plainly evident and explains the nearly 5 to 1 ratio between the baseline and actual experience. These concepts should not be used to inflate a baseline or to justify the costs proposed in this ATCM. The costs the rule would impose on plating firms and the California economy should not be justified by phantom elimination of emissions that have already been eliminated.

Thanks for your time. The Hex Chrome ATCM referenced repeatedly in this email can be found here.

Hexavalent Chromium Maximum Contaminant Level (MCL) (ca.gov)

<https://dof.ca.gov/wpcontent/uploads/Forecasting/Economics/Documents/SRIAChrome.pdf>

Response 15-1:

Please see Master Responses 1, 11, 13, and 15. CARB staff disagrees with the commenter’s calculation, which appears to inappropriately combine the results of two different data sources and does not account for the complexities of emission inventory calculations. To clarify, the SRIA is a point-in-time document, and the information in the SRIA is based on the best information that staff had at the time it was drafted. The SRIA was released on May 26, 2022, and since then CARB staff have updated the emission inventory based on data received from Districts and to correct the emissions inventory data in Appendix B of the ISOR, as stated in the First 15-Day Notice and Second 15-Day Notice. The 2.2 pounds annually listed on Table 2.1, page 21 of the SRIA, represents the estimated actual emissions of hexavalent chromium based on source tested emission factors. This number was corrected to 1.05 pounds annually, as detailed in the Second 15-Day Notice. This estimate captures only the emissions that are directly released from the chrome plating tanks, either through the add-on control system or off the surface of a tank that is controlled with a fume suppressant. Staff based this value on the source testing emission factors, which were calculated using the average emission rate from source tests for each facility type, and the 2019 throughput ampere-hours that were reported by the facilities to their Districts. If 2019 throughput information was not available from the Districts, staff used the permitted annual throughput. The estimates contained in the emission inventory do not include fugitive emissions, which continue to be a concern even for facilities complying with the Rule 1469 requirements (see Master Response 12).

Although the hexavalent chromium emissions from chrome plating facilities appear small, due to its toxicity, even small amounts present a serious threat to human health (see Master Response 2).

The following comments expressed related concerns: 15-2 and 39-2.

Summary of Comments 15-2 and 39-2:

Comments state that CARB has not measured fugitive hexavalent chromium emissions from chrome plating facilities and should not base rulemaking activity on fugitive emissions or state that a ban of hexavalent chromium is necessary because of fugitive emissions. Commenters note the lack of specificity and quantification of fugitive emissions in the rulemaking documents and state that fugitive emissions should not be discussed unless they are quantified. These comments also note that SCAQMD's Rule 1469 already has significant controls against fugitive emissions.

Response 15-2 and 39-2:

Please see Master Responses 2, 11, 12, and 15. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 18:

Appendix B contains data errors, spreadsheet errors, calculation errors, and assumption errors. To the extent it is the source of any allegations, conclusions, statements, or any logic basis in support of the ISOR, SRIA, or the rule formulation, it should be corrected. The data shown for our facility shows incorrect emissions, incorrect emission permit limits, and incorrect source test emission rates. It is difficult to find any row of data in the appendix that correctly represents any facility.

If CARB is able to identify the correct data and calculations to support the rule making, we request a new 45 day comment period following the release of a new appendix B. It is only fair.

A rule making like this, in which there is an opportunity to decrease overall hexavalent chrome emissions in the state by 0.2% and will eliminate thousands of jobs, damage the state economy, and disrupt several industries deserves to be based on correct data.

Response 18:

Based on this comment, and others like it, CARB staff corrected the errors in the Emission Inventory. Please see Master Response 11.

Comment 26:

Air monitoring in Paramount revealed that dichromate seal tanks were a source of hex chrome and that CARB and AQMD had NO RULE to control dichromate seal tanks! The tanks were unregulated. An uproar ensued. CARB and AQMD came under fire. How could they let this happen? Blame had to be assessed. Round up the usual suspects...chrome platers! A new rule was made. Media headlines blamed platers but the firms with dichromate seal tanks were NOT decorative chrome platers and were NOT hard chrome platers.

CARB's allegations about fugitive plating emissions from "uncontrolled tanks" are based on this situation in Paramount and on another in Newport Beach. But, again, the Newport Beach firm is NOT a decorative chrome and NOT a hard chrome plater either. So why does this rule target decorative and hard chrome plating? Why does it justify action based on "fugitive plating emissions from uncontrolled tanks" when hard and decorative platers don't have

dichromate seal tanks? How did CARB draw a line from Dichromate seal tanks to hard chrome and decorative chrome platers?

Response 26:

As discussed in Master Responses 2 and 14 and throughout the ISOR, the Proposed Amendments were developed following staff's extensive evaluation of emissions from chrome plating facilities and their impact on public health. As described in the ISOR, monitoring of hexavalent chromium has shown elevated concentrations in several California communities. In addition, CARB's 2018 Community Air Protection Blueprint (Blueprint) sets forth CARB's strategy to reduce air pollution in these communities. The Blueprint explains that, in addition to impacts from large industrial facilities such as oil refineries, communities suffer due to proximity to smaller sources like chrome platers, metal recycling facilities, oil and gas operations, and other sources of emissions, which contribute to localized air toxics impacts. Finally, CARB staff were given direction by the Board in Resolution 20-25 on the California Air Toxics Program Update, to develop appropriate proposed steps to expeditiously transition away from hexavalent chromium use in chrome plating and chromic acid anodizing operations to less-toxic alternatives such as trivalent chromium.

Please see Master Response 12 regarding fugitive emissions, which are a concern for all types of chrome plating and are not limited to dichromate seal tanks. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 32:

Any discussion about hex chrome rules should be based on data and that data should be made available to the public in a transparent and accurate manner.

CARB has posted data about Hex Chrome at their own website here: (<https://www.arb.ca.gov/adam/toxics/statepages/cr6state.html>). Thank you CARB. The data include helpful computations for MEAN levels of hex chrome and ESTIMATED RISK of hex chrome statewide since 1991. Please note the improvements made over that time. For reasons which are not clear to this reader, CARB has stopped supplying the MEANS and the ESTIMATED RISKS since the beginning of this rulemaking. I could guess that this is because some months do not contain data but this is curious given the higher number of observations shown. Even more baffling is the lack of data observations shown in the second half of 2022. Why would CARB stop sharing data with the public concurrent with this rule making and leading up to a CARB board decision? Coincidence? It is hard to see this as coincidence and it is especially troubling when we have also learned from CARB that the data in appendix B is not correct. Why is data about hex chrome emissions less available and less reliable just as the CARB board and the public and the impacted parties are approaching decision?

Response 32:

Please see Master Responses 1, 11, and 13. The ISOR contains a thorough evaluation of emissions from the chrome plating industry in California and potential health risks that result from exposure to hexavalent chromium emitted by chrome plating facilities. This data has been available to both members of the public and CARB Board members since November 29, 2022, and corrections to this data were made available for 15-day comment periods, as required. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 49-12:

The emissions inventory used in the update is a guess, based on estimates and assumptions tied to maximum permitted limits. This is confirmed in Appendix F-22: [click here](#) and SRIA 21: [click here](#):

F-22: The emission factors used for facility emissions were based on the current ATCM limits and Proposed Amendments limits (see Section I.B). The annual emissions rates were calculated by multiplying the amp-hours by the respective emission factors.

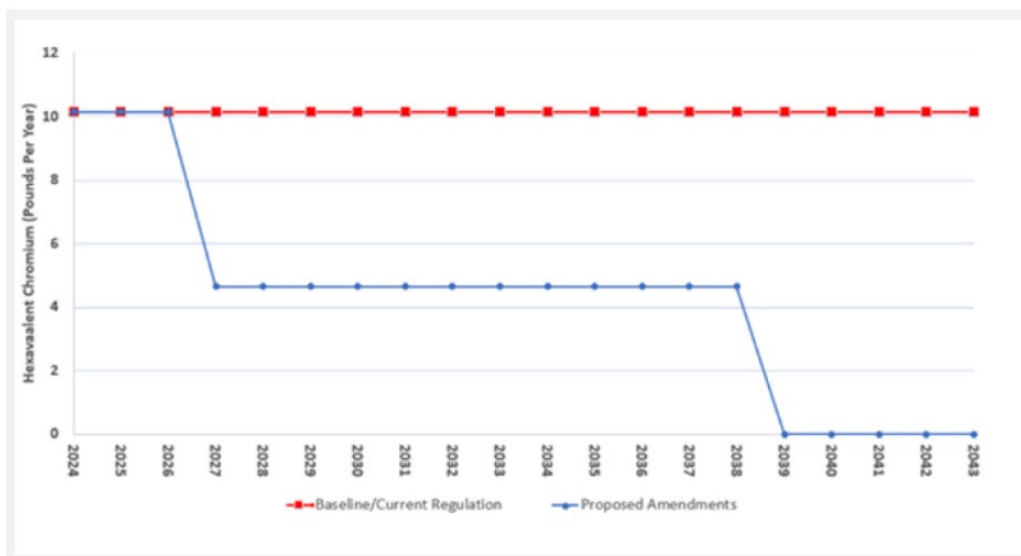
SRIA 21: When 2019 facility throughput data is not available, the permitted throughput limit is used to estimate actual emissions. Also, when source testing data is not available, ATCM limits are used to estimate actual emission rates. To estimate the ATCM limit and actual emissions, CARB obtained the annual throughput data for approximately 80 percent of facilities for the calendar year 2019. Using emissions limits may overestimate actual emissions at some facilities. The emission estimates for any given year can be calculated by multiplying the electricity usage (activities or throughput) in ampere-hours, the number of hours used for chrome plating, and any emission factors (see equation below).

The update is not based upon accurate emissions data. CrVI plating facility emissions have been significantly reduced over the years to the extent that chrome metal finishing comprises significantly less than 1% of total CrVI emissions for the entire state. The draft Multiple Air Toxics Exposure Study [MATES] V report shows a significant decline in CrVI emissions. This is prior to the adoption of SCAQMD's Rule 1469. Adoption of this rule and its controls [HEPA/fume suppressant] by facilities not located within the district would reduce emissions statewide by a projected 94%. In contrast, the SRIA on Page 22 states that:

"The resulting permitted emissions (based on maximum permitted throughput and ATCM emission limits) represent a possible maximum emission from all of the chrome plating facilities in California at 10.19 pounds of hexavalent chromium per year. Using the ATCM emission rate and actual reported 32 Paramount Emissions Investigation - Summary of Efforts Paramount – Ongoing Air Monitoring Activities SRIA 22 ampere-hour data, the estimated potential emissions from chrome plating facilities is 3.81 pounds of hexavalent chromium per year. When using available source test data and actual reported ampere-hour data, the estimated actual emissions in 2019 is about 2.3 pounds of hexavalent chromium."

As clearly shown in the following figure in the SRIA, the document establishes a baseline utilizing allowable rather than real emissions data to overstate the minimal contribution that metal finishers make to total CrVI emissions, ignores the significant impact of Rule 1469 in reducing emissions, and focuses on zero emissions as the target:

Figure 1: Current Regulation/Baseline vs. Proposed Amendments Hexavalent Chromium Emissions



Response 49-12:

Please see Master Responses 1, 2, 11, and 15. The SRIA is a point-in-time document and the information in the SRIA is based on the best information that was available at the time it was written. The SRIA document was release on May 26, 2022, and since then CARB staff have updated the emission inventory based on data received from the Districts. In addition, staff corrected the emissions inventory data in Appendix B of the ISOR, as stated in the First 15-Day and the Second 15-Day. As discussed in the Master Response 11, staff evaluated a range of potential emissions based on the available data at the time of its creation. This range included estimated emissions based on the emission limit from the currently effective 2007 ATCM as well as estimated emissions based on source tested emission factors.

Comment 81-2:

It is with chagrin that we analyzed the data in Appendix B to find that over 20% of the platers in the state appear to have exceed their permitted ampere hour limits, and that more than half of the platers in the inventory are permitted for more than 1 million ampere hours of use.

Response 81-2:

Please see Master Response 11. In response to this comment, CARB staff corrected a transcription and sorting error that had occurred in the emission inventory in Appendix B of the ISOR. After these errors were corrected, the data showed that at least one facility exceeded their permitted throughput limit, for which the District issued a Notice of Violation. Staff made the corrections available via the First 15-Day, which was posted on March 27, 2023, for public review and comment through April 11, 2023.

The following comments expressed related concerns: 97-3, 174-4, and 156-1.

Comment 97-3:

The other issue that I'd like to bring to the Board's attention is the numbers that the staff has presented to you on the emissions that are generated in the decorative and functional plating are very elevated. The calculations were done using maximum throughput at maximal

-- maximum allowable emission rates. These numbers are not accurate. Our emissions are much lower than what has been presented.

Comment 174-4:

Our emissions have been overstated, just as Art Holman [Comment 97-3] pointed out.

Comment 156-1:

Today's meeting at the beginning it was mentioned that the chrome platers have potential for putting over 10 pounds of chrome into the atmosphere a year. We have charts that show it looks like it's more like a pound, maybe a pound and a tenth, much different than 10 pounds. Potential is an interesting thing. The AQMD puts together source test regulations for metal finishing, for plating, for chrome. You hire independent contractors that you pay tens of thousands of dollars to. They come out. They tent the tank and they put the tank under abnormal conditions. What are those? They tent – they put the tank at maximum current. That's like driving your car 200 miles an hour for 30 days and then complaining it doesn't stay together. It's not right, not fair. So that's the test that we do and that's where they get their numbers from from those tests.

Response 97-3, 174-4 and 156-1:

Please see Master Response 11. Notably, the emission inventory does not include fugitive emissions, which are a significant concern to communities (see Master Response 12). CARB staff made no changes to the Proposed Amendments based on the received comments.

h) Suggestions for Amendment Alternatives

The following comments expressed related concerns: 6-7, 13-1, 17-5, 24-4, 29-3, 35-1, 36-1, 49-1, 85-1, 90-1, 98-1, 113-2, 115-2, 118-2, 119-2, 123-1, 125-1, 128-1, 136-4, 138-2, 148-2, 155-4, 156-3, and 159-3.

Summary of Comment 6-7 et al.:

Many comments state that CARB should create an emission-based regulation for hexavalent chromium plating processes, not a regulation that prohibits the use of hexavalent chromium. Commenters state that hexavalent chromium emissions from the chrome plating industry have already been reduced by greater than 99.9 percent because of the stringent hexavalent chromium emission requirements in California. Commenters state that there are technologies that mitigate the risks of hexavalent chromium, and that an emission-based rule will reduce hexavalent chromium emissions without imposing significant economic hardships on California's plating industry. Commenters state that the chrome plating industry is willing to implement a lower, attainable emission limit to protect community health, the environment, and the industries that require hexavalent chromium.

Response 6-7 et al.:

Please see Master Responses 2, 12, and 15. While there are some measures, such as housekeeping, best management practices, and building enclosures, that can reduce fugitive emissions, they do not eliminate them entirely. In consideration of industry concerns, CARB staff extended the phase out dates and included requirements such as those mentioned by commenters to reduce emissions in the interim prior to the applicable phase out (see Master

Response 4), in order to reduce the adverse health impacts on communities created by extending the phase out date.

Comment 11-5:

Please consider amending your proposed legislation to allow for concessions for my industry [the classic and custom car industry]. If this might mean allowing small production numbers, while banning production over a certain limit, I am positive that the businesses in my industry would fall well below any threshold of significant pollution.

Response 11-5:

Please see Master Response 14 for an explanation of why the Proposed Amendments apply statewide. This request would allow emissions, including fugitive emissions, to continue to impact communities near chrome plating facilities that serve the classic and custom car industry by allowing those facilities to continue use of hexavalent chromium (see Master Responses 2 and 12). There are many groups within the broader chrome plating industry that would like a similar exception to apply to their operations. If we adopted an exception for the classic and custom car sector, other sectors would demand a similar exception for their operations. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 13-8:

1. The Draft Chrome ATCM includes three definitions that do not appear to be relevant anymore considering CARB's own conclusion that over 141 metal finishers in the state, there is less than four pounds of hexavalent chromium emitted. The three definitions are:

"Large, hard chromium electroplating facility" (more than 10 pounds of hexavalent chromium emitted)

"Medium, hard chromium electroplating facility" (between 2 and 10 pounds of hexavalent chromium emitted)

"Small, hard chromium electroplating facility" (less than 2 pounds of hexavalent chromium emitted)

These three definitions appear to have been part of the Chrome ATCM when it was originally adopted; however, in the current regulatory environment, there are no metal finishing facilities statewide that would qualify as either medium or large. With all facilities falling within the small category, there appears to be no reason to segregate facilities based on these inapplicable definitions. Based on information known at this time, these definitions do not appear to have any function.

2. "Chromium electroplating or chromic anodizing tank" is a defined term that appears in the Draft Chrome ATCM text; however, there are several instances within the text where the terms "chromium electroplating or chromic anodizing operation" or "chromium electroplating or chromic anodizing facility" are used. See e.g., definition of "Source". Neither of these latter terms are defined. This ambiguity could alter the understanding and scope of what constitutes this sort of operation or facility.

3. The revised Table 93102.4 has proposed deleting the Effective Date for compliance for all allowed uses. Section 93102.7(a)(3) states: "Existing facilities must conduct the performance test required by this section 93102.7 no later than the applicable effective date contained in

Table 93102.4." If there is no longer an effective date, then the latter section appears unnecessary.

Response 13-8:

CARB staff have noted all the discrepancies identified above and have revised the regulation text to address them. These changes were made available for public review during the 45-Day comment period and the First 15-Day comment period.

Comment 13-15:

1. Has CARB considered a lower acceptable emission threshold for source-tested facilities in lieu of a ban?
2. Has CARB considered, in lieu of an outright ban, the allowance of new MF uses of hexavalent chromium if both distance to a sensitive receptor and the exposure threshold meet a specific risk value? What about facilities that can further modify and reduce their emissions in lieu of a ban?

Response 13-15:

Please see Master Responses 2, 12, and 14. CARB staff considered a lower emissions limit as part of this rulemaking process, but this alternative was rejected. For details, please see Alternative 2 under Consideration of Alternatives, which can be found on page 8 of this document. Additionally, fugitive emissions, which are not captured by control devices or measured by source tests, would continue to threaten public health even if a lower emission limit was adopted in lieu of the phase out. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 14-6, 40-9, 59-5, 60-1, 71-3, 99-2, 146-4, 147-2, and 152-2.

Summary of Comment 14-6 et al.:

These comments ask that CARB work collaboratively with the chrome plating industry to find solutions that allow chrome plating facilities to stay in business while addressing public health and environmental justice concerns.

Response 14-6:

Please see Master Responses 8, 5, and 13. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 13-19:

CARB should work with researchers, metal finishers, other industry, and fellow federal and regional agencies to develop and test viable alternatives for hard plating, and work in a coordinated fashion to update requirements as alternatives can be proven to be safe and effective across different applications.

For example, after considering a similar ban on chrome plating, the European Union took a very different approach under its REACH program and now leads the way in pushing alternatives while at the same time tightly regulating specific uses where no short-term solutions exist.

Periodic technology reviews are an appropriate approach to determining whether there are alternatives to CrVI plating that are compliant with the requirements of the defense and aerospace industries, are acceptable to our customers, and that do not present new threats to the environment.

Technology Review followed by Action – yet another alternative to specific ban dates is to establish specific dates for periodic technology reviews with a ban triggered by the determination in that review that an alternative to CrVI meets the requirements for a specific application [such as MILSPEC] or customer.

Response 13-19:

Please see Master Responses 5, 6, and 13. CARB staff agree that technical reviews are appropriate for functional plating and have included those in the Proposed Amendments.

Comment 13-22:

The ban will not further development of mutually beneficial approaches. The ban ends decorative CrVI plating in the state. A more reasoned endeavor would be to work together with industry, communities and other stakeholders to educate our customers to the value propositions presented by alternatives to CrVI and increase customer acceptance of a transition.

Response 13-22:

Please see Master Responses 2, 5, 7, and 13. CARB staff agree with the commentor's statement that there is a need "to educate our customers to the value propositions presented by alternatives to CrVI and increase customer acceptance of a transition." However, staff do not agree that this approach precludes a phase out of the use of hexavalent chromium. Indeed, the legislature expressed its intent in AB 211 to provide \$10 million in funding to, in part, to increase customer awareness and acceptance of trivalent chromium as an alternative to hexavalent chromium in chrome plating (see Master Response 7). The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative.

Many of CARB's regulations rely on the development of technology to achieve emissions reductions. Please also see Master Response 4 for a discussion of the extensions to the phase out date provided in response to industry concerns.

The following comments expressed related concerns: 27-5, 40-4, and 174-1.

Summary of Comments 27-5, 40-4, and 174-1:

These comments request that CARB adopt the European model and grant conditional exemptions until a viable and proven alternative to hexavalent chromium is identified. Comments 40-5 and 174-1 note that affiliate companies in the European Union (EU) obtained a Registration, Evaluation, Authorization, and Restriction of Chemicals Regulation (REACH) exemption by demonstrating the social economic benefits of using hexavalent chromium outweighed the environmental risk.

Response 27-5, 40-4, and 174-1:

Please see Master Responses 2, 5, 6, and 14. CARB staff recognize that the EU may have taken a different approach to protecting the health and well-being of its citizens with regards to hexavalent chromium emissions from chrome plating facilities. That decision was likely based on the specific circumstances that surround the chrome plating industry within the EU member nations. However, as discussed in Master Response 14, CARB's responsibility is to protect the health and welfare of all Californians. As discussed in Master Response 6, trivalent chromium is already available to replace hexavalent chromium for decorative chrome plating and is being developed to replace hexavalent chromium in functional chrome plating. Please see Master Response 5 for a discussion of the technology reviews required to assess the development of alternatives to functional plating prior to the phase out in 2039. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 13-6, 15-5, 19-2, 19-4, 48-3, 49-5, 59-3, 63-1, 79-1, 80-4, 100-2, 107-1, 114-3, 116-3, 126-3, 149-2, and 176-4.

Summary of Comment 13-6 et al.:

Many comments stated that CARB should adopt SCAQMD's Rule 1469 instead of prohibiting the use of hexavalent chromium. Commenters note that adoption of this rule would reduce emissions statewide by a projected 94 percent. Commenters also note that CARB participated in SCAQMD's rulemaking, but the Proposed Amendments ignore the provisions of Rule 1469, the costs of compliance, and its effectiveness in reducing emissions including fugitive emissions. These comments state that there is no analysis or risk analysis that facilities that are meeting the Rule 1469 requirements are endangering public health and that CARB staff should provide data, analysis, and testing that shows Rule 1469 is not effective at protecting public health.

Response 13-6 et al.:

Please see Master Response 15. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 19-3, 49-9, 57, and 137-2.

Summary of Comment 19-3 et al.:

These comments state that the requirement to source test pollution control systems every two years is unnecessary, unsubstantiated, and costly. Commenters note that it is unnecessary because compliance with Rule 1469 requires monitoring of control system parameters such as pressure drops and slot velocities and documented maintenance practices. Commenters would like to see data that supports the need for source testing every two years and request that the source test requirements be relaxed to a frequency of every five years or fewer.

Response 19-3 et al.:

Source testing is necessary to demonstrate that control equipment is functioning correctly. CARB has seen a wide range of results from source tests, and more frequent sources testing can ensure that equipment is in proper working order. More frequent source testing is also an important tool to verify compliance and to help reduce emissions prior to the phase out

dates. CARB staff made no changes to the Proposed Amendments based on the received comment.

The following comments expressed related concerns: 13-21, 19-5, 24-6, 49-11, and 107-3

Summary of Comment 13-21 et al.:

Comments note that the Proposed Amendments do not provide an opportunity for chrome plating facilities to obtain a variance and state that CARB should provide an option for decorative chrome platers to comply with the regulation rather than prohibiting the use of hexavalent chromium. Commenters note that trivalent chromium for decorative chrome plating should not be the only hexavalent chromium alternative.

Response 13-21 et al.:

Please see Master Response 6. Although the Proposed Amendments phase out the use of hexavalent chromium in chrome plating operations, they do not prescribe any specific replacement technology. As such, other alternatives besides trivalent chromium could be used to replace hexavalent chromium, including non-hexavalent chromium technologies, which may be developed in the future. Due to the factors discussed in Master Response 2, including the extreme toxicity of hexavalent chromium and the proximity to sensitive receptors, the Board has determined in Resolution 23-16 that a zero-emission level is necessary to protect public health.

Please see Master Response 14 for an explanation as to why CARB staff did not add the requested variance, which would allow emissions of hexavalent chromium from the chrome plating facilities covered by the variance to continue to impact communities. Please also see Master Response 12 for a discussion on fugitive emissions. CARB staff made no changes to the Proposed Amendments based on the received comment.

The following comments expressed related concerns: 49-7 and 107-5.

Comment 49-7:

It is important that the updated ATCM meet the goals of the California Health and Safety Code [HSC]. HSC Section 39666[c] requires the ATCM for toxic air contaminants [TACs] with no identified safe level of exposure to reduce emissions to the lowest level achievable through application of the best available control technology or a more effective control method, in consideration of the factors specified in HSC Section 39665[b]. These factors include health risks, availability and technological feasibility, costs, and the availability, suitability, and relative efficacy of less hazardous substitute compounds.

HSC Section 39666[c] requires the ATCM "to reduce emissions to the lowest level achievable through application of the best available control technology or a more effective control method." The current draft CrVI ATCM fails to identify or analyze the best available control technology [BACT] or more effective control methods. This is a clear error since the South Coast Air Quality Management District [SCAQMD] recently developed and adopted Rule 1469 with BACT requirements.

Further, HSC Section 39666[c] does not state that the ATCM may include two of the key provisions of the draft update: [i] chemical bans; and [ii] requirements to substitute trivalent and other yet-to-be-determined substitutions for CrVI.

Comment 107-5:

We think that 1469 plus balances the Health and Safety Code section I think it's 39666 that talks about balance -- best available control technology as opposed to looking at costs and the cost to the industry and the acceptability.

Response 49-7 and 107-5:

Please see Master Responses 1, 2, and 15. CARB staff analyzed the factors in Health and Safety Code section 39665 in drafting the Proposed Amendments, including available data on emissions and health risks, as well as availability, technological feasibility, costs, suitability, and relative efficacy of less hazardous substitute compounds. As discussed in Master Response 6, an effective alternative is already available for decorative chrome plating applications, and alternative technologies are in development for functional chrome plating applications. Please also see Master Response 5, which discusses the required assessments of replacement technology to replace hexavalent chromium in functional chrome plating applications.

CARB has phased out chemicals pursuant to its authority to regulate toxic air contaminants under Health and Safety Code section 39666, including the recent phase out of perchloroethylene in dry cleaning operations and certain chlorinated compounds used in automotive maintenance and repair operations. CARB staff made no changes to the Proposed Amendments based on the received comment.

Comment 59-4:

Object to technology reviews to potentially adjust phase out dates.

Future technology reviews should only occur if the rulemaking does not include the elimination of a process.

It is confusing why CARB would propose a rule that would include the following phase outs: (1) phase out use of hexavalent chromium in decorative plating by 1/1/2027; and (2) phase out use of hexavalent chromium in functional plating (hard plating and chromic acid anodizing) by 1/1/2039— and then concurrently propose further reviews that would question its conclusions.

The regulated community, and its employees/families, rely on rulemaking agencies to make thorough and informed decisions. Any loss in the livelihood of our small businesses and workforce is not acceptable if the agency already plans to go back and alter its decisions.

Lastly, if CARB staff is relying on California to accelerate innovation and technology changes through this rulemaking, it has not accepted that California is no longer the driver of decision making for metal manufacturing. Over that last 20 years, worldwide commerce, international competition, and the ability to share technology has allowed metal manufacturing to thrive faster in neighboring states and far away continents.

Response 59-4:

Please see Master Responses 2, 5, and 8. Master Response 5 includes a discussion of the two technology reviews built into the ATCM that will evaluate the state of suitable replacements for hexavalent chromium for functional chrome applications. The commenter and all other stakeholders, including industry and community members, are welcome to participate in the technology review process.

Many of CARB's regulations rely on the development of technology to achieve emissions reductions. As discussed in Master Response 4, CARB staff is hopeful that the large number of functional plating operations and customers in California will help accelerate the development of suitable alternative technology, which could be used as a replacement to hexavalent chromium worldwide. Further, CARB staff is hopeful that other states and countries will follow CARB's lead in phasing out hexavalent chromium, as they have done for many other CARB regulations in the past. CARB staff made no changes to the Proposed Amendments based on the received comment.

Comment 85-12:

The surface finishing industry welcomes the opportunity to work with CARB on a voluntary, cooperative initiative to transition to decorative trivalent chromium processes, rather than rely on a draconian, inappropriate, and ineffective ban on hexavalent chromium plating and anodizing.

Response 85-12:

Please see Master Response 13. CARB looks forward to continuing to work with the surface finishing industry on implementation of the ATCM. Please also see Master Response 2. CARB staff made no changes to the Proposed Amendments based on the received comment.

The following comments expressed related concerns: 14-3, 34-5, 50, 51-1, 55, 56, 61, 68, 106-2, 131-3, 132-2, 142-2, and 143-2.

Summary of Comment 14-3 et al.:

Many comments note that a small amount of hexavalent chromium is used in decorative chrome plating processes, especially compared to the amount of hexavalent chromium emitted by other sources. These comments state that the small amount of hexavalent chromium in decorative plating is not causing harm to the environment or that there are other chemicals and generally other dangerous threats that impact people more than hexavalent chromium emissions. These commenters suggest that time and resources be spent regulating other sources such as diesel fuel, aircraft fuel, spills and mishandling, and concrete cutting and grinding, instead of hexavalent chromium plating.

Response 14-3 et al.:

Please see Master Responses 2 and 3. Although the emissions from hexavalent chromium plating facilities represent a relatively small percentage of the total hexavalent chromium emissions in the state, many of these facilities are located in close proximity to homes and sensitive receptors such as schools and daycare facilities, resulting in high exposure. Many are also located within disadvantage communities. As discussed in Master Response 6, a less toxic alternative technology is already available for decorative chrome plating and is currently being used. Based on its evaluation of the factors in Health and Safety Code section 39665, CARB staff is proposing to eliminate the use of hexavalent chromium by the chrome plating industry in order to protect public health. CARB staff will continue to investigate other sources of air pollution impacting California communities and to pursue strategies for

reductions from a variety of sources. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 16-4:

Quit focusing on the small Mom and Pop shops that make this country and this State what it is and focus on the real issues (homelessness, crime, political insider trading, illegal immigration, fentanyl) just to name a few.

Response 16-4:

While CARB staff recognize the importance of the societal issues identified by the comment, these issues are beyond the authority of CARB to address. As discussed in Master Response 14, CARB's role is to reduce the impact of pollutants and toxins in the air to protect public health. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 19-1:

The rule language itself could improve by ...1) Recognizing that some chrome platers who do not use PFAS/PFOS, are not located near schools, are not located near sensitive receptors, have fully compliant HEPA systems and 1469 compliance, are located in CalEnviroScore areas with no population and therefore no CalEnviroScore, but perform vital work that supports the national commercial aviation and DOD infrastructure (e.g ... us) should have a right to exist until a substitute technology can be identified. Don't ban us before the replacing technology is identified, ban us after the replacing technology is identified. For us, the substitute technology won't be trivalent plating. Take out the ban language associated with hard chrome platers - no one can raise capital with that in there.

Response 19-1:

Please see Master Responses 5, 8, and 15. CARB staff appreciates the reductions that have been achieved through control technologies and compliance with Rule 1469 (for facilities located in SCAQMD's jurisdiction). However, fugitive emissions continue to be a significant source of concern for communities (see Master Response 12). Further, as discussed in Master Response 2, the Board has determined that a zero-emission level is necessary to protect the public health, as did the Legislature in AB 211.

As discussed in Master Response 4, many of CARB's regulations rely on the development of technology to achieve emissions reductions. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 23:

I have provided input that there are discrepancies and errors in and between the ISOR, the SRIA, and the proposed rule. I request that those documents be updated to correct the discrepancies and logic failures (e.g... annual emission reduction being greater than annual emissions, rule motivation attributed to environmental justice concerns but unsupported by documented AB 617 CERPs in the EJ communities, and more...).

To the extent the rule might be changed to address the comments of myself and others, I request that the public be given 45 days to analyze the changes and provide comment. This is reasonable considering that individual members of the public and owner/managers of small

businesses do not have sufficient time and resources as do large corporations and the State of California to devote to analyzing the rule.

This rule making is an excellent example of the difficulty that small businesses have in working with California regulators.

Response 23:

Please see Master Responses 1, 11, and 13. The SRIA document contains a point-in-time analysis of the potential economic impact of the Proposed Amendments. Master Response 11 includes a discussion of the updates to the values since the SRIA was released on May 26, 2022. Staff provided the required period for public comment at each stage of this rulemaking. As discussed in Master Response 13, CARB staff have worked with facility owners throughout the rulemaking process. CARB staff made no changes to the Proposed Amendments based on this comment.

The following comments expressed related concerns: 12-3 and 104-3.

Comments 12-3 and 104-3:

CARB presents the purpose for the rule change as being necessary to achieve environmental justice goals. (See the purpose section of the ISOR pages 1 to 5). But, based on data, this doesn't even seem to be valid. You can see for yourself if you take the time to read the AB 617 process Community Emissions Reduction Plans from the following environmental justice communities: 1) Wilmington, Carson, and West Long Beach; 2) San Bernardino/Muscoy; 3) East LA, Boyle Heights; 4) East Coachella; 5) South LA; and 6) Southeast LA. All of those community generated plans (with one exception) appropriately recognize that chrome plating firms are not an area of concern. So, who is CARB listening to?

Why would CARB move to implement a STATEWIDE ban based on what might be an issue in one EJ community? Keeping in mind that metal working is a major job engine for California, is this how social justice is supposed to work. Do jobs count for anything?

It seems to me that the whole point of the EJ movement is to be responsive to people in their communities. So, to do that, the state (CARB) should not implement statewide edicts that impact communities other than the ones where problems may exist. Otherwise, they create more problems than they solve!

CARB should adopt an emissions-based approach.

Comment 104-3:

Westside, Wilmington, and Carson were the first AB 617 community. And the CERP they wrote did show concern for hex chrome, but did not identify chrome platers as the problem. In fact, five of the first six AB 617 communities did not identify chrome platers as the hex chrome problem, but one did, so now we're going to get a non-local statewide ban imposed because of a local situation in one area. It was not the intent of AB 617 to steamroll community decisions, but CARB is costing jobs in West Long Beach and Carson.

Response 12-3 and 104-3:

Please see Master Responses 8, and 12-15. The commenters improperly concluded that CARB staff brought this action before the Board in response to the input from a single EJ community. Hexavalent chromium plating facilities are located in numerous Environmental

Justice communities, as discussed in the ISOR. CARB's 2018 Community Air Protection Blueprint (Blueprint) sets forth CARB's strategy to reduce air pollution in these communities. The Blueprint explains that, in addition to impacts from large industrial facilities such as oil refineries, communities suffer due to proximity to smaller sources like chrome platers, metal recycling facilities, oil and gas operations, and other sources of emissions, which contribute to localized air toxics impacts. Hexavalent chromium emissions from chrome plating facilities have been a long-standing issue in communities within SCAQMD's jurisdiction as well as in communities outside of the South Coast Air Basin.

The following comments expressed related concerns: 75 and 88.

Comment 75:

According to the health risk data published with this rule proposal, proximity is a major factor in risk. The EJ's say there are local problems in some Southern California communities. They are asking for solutions. CARB's proposal completely misses the local nature of the stated problems and imposes a non-local statewide rule and a statewide ban. This is completely opposite the intent of AB 617 which asks CARB to place emphasis on the needs of local communities.

There is no relief from the ban granted to platers in communities with no residents. There is no relief granted to platers who are not near schools. It is especially curious that there is no provision to allow new permits in areas away from EJ communities and residents so that the platers the EJ community wants out, would have an in-state alternative place to go. A win-win. CARB is not providing a reasonable method for well-intentioned, law-abiding businesses to exist.

Comment 88:

If an area is recognized in the CalEnviroScore database as not having residents and therefore has no score then hex chrome plating should not be banned or phased out in that area. Hex chrome plating is necessary and these types of areas are ideal for locating hex chrome businesses. Why send work out of state and to Mexico when there is an in-state alternative? Amend the proposed ATCM to carve out areas with no residential populations and allow hex chrome plating in those areas. It is necessary.

Response 75 and 88:

As with comment 12-3, the commenter is proposing a regulation that would only apply to certain geographic areas. Please see Master Response 14 for an explanation of why the Proposed Amendments apply statewide and do not provide the exceptions requested. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 101-5 and 120-2.

Comment 101-5:

In closing, I would ask the Board to postpone the banning of hexavalent chrome until trivalent chrome improves. When trivalent chrome can match the look of hexavalent chrome, I will gladly get rid of hexavalent chrome.

Comment 120-2:

Because of the functionality of the hex chrome to tri-chrome is still being developed as a direct replacement, I feel more time is needed for manufacturers of the chemicals to come up with the perfect solution.

Response 101-5 and 120-2:

Please see Master Responses 4, 5, and 6. As discussed in Master Response 4, in response to industry concerns such as those expressed in these comments, CARB pushed back the dates of the phase outs in the Proposed Amendments from the dates presented in the initial Proposed Draft Regulatory Language, which was posted on July 2021.

Comment 120-3:

I ask when this proposition does become law, that CARB needs to take a look to coordinate with other State agencies to plan to assist the metal finishers businesses in transitioning costs.

Response 120-3:

Please see Master Response 7. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 121:

He said we are asking you to considering the following steps for CARB to implement in an effort to help -- truly help end the use of hex chrome for California and the world. He goes, in the next six months, CARB and quality air management researchers should work with the industry and metal finishers to identify all specifications on industry coating standards that still call for the use of hexavalent chrome. Take the information and begin collaborative work between the OEM and the prime contractors, save chemical productors[SIC] and so forth, and so on.

Response 121:

Please see Master Response 5. CARB staff agree that collaborating with stakeholders will be an important part of finding suitable replacements for hexavalent chromium in functional chrome applications. CARB welcomes participation in the technological reviews discussed in Master Response 5 by all interested stakeholders, including industry, original equipment manufacturers, and contractors. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 148-3:

I'm asking that you...spend the \$10 million that's been allocated to generate tools that we can use to measure and monitor ourselves, inexpensive tools where we can see how much chrome there is and monitor to a risk-based rule.

Response 148-3:

Please see Master Response 7. In AB 211, the legislature specified that the funding be used to assist with the "necessary" transition away from hexavalent chromium plating in California and to further consumer awareness and acceptance of trivalent chromium plated projects and to further technology. The legislature also states their intent to "Make this funding

available upon the board's adoption of an air emission rule to fully eliminate hexavalent chromium at all decorative and functional chromium plating facilities and chromic acid anodizing facilities statewide." Since this money is conditioned on the Board's adoption of a rule that fully eliminates hexavalent chromium from chrome plating statewide, the adoption of the Proposed Amendments is a necessary first step. The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 153-2:

You know, going into more -- you know, more alternative methods like distillation and, you know, reclamation. You know, I think those are the answers than, you know, just shutting us -- shutting down chrome -- the chrome process.

Response 153-2:

Although distillation and reclamation are concerns when dealing with the waste products of the chrome plating industry, they are not the focus of the Proposed Amendments. The primary focus of the Proposed Amendments is the release of hexavalent chromium into the air from control devices and as fugitive emissions from buildings during regular operation, not necessarily as a result of handling and disposing of waste. Other agencies have jurisdiction regarding the control of hazardous waste and discharges to water.

Please see Master Responses 2. As discussed in Master Response 8, the Proposed Amendments do not shut down chrome plating operations, which will continue to be allowed in California using alternative technology following the applicable phase out date. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 158:

Science, including the invention of hex chrome, provides wonderful technologies, like teflon, but teflon required PFOS to make teflon. We knew it had a problem, but we didn't ban teflon. Now, after many years, they want to alter these forever chemicals. Not too far way from here, there was a town called Dairy Valley. It was where the farmers, the dairy farmers had cows that created manure and urine that contaminated the groundwater. We didn't ban milk production, we moved them to Chino. We have lead in gasoline, freeways going by apartments, going by homes. We did not ban gasoline. We corrected the technology. I hold a super conductor -- excuse me, super computer in my hands. I can access the most powerful databases in the world and a cesspool of porn, we do not ban cell phones. Facebook was created to create social media among families and friends, but we also allow it to have a platform for racism and terrorism. We do not ban Facebook. You have technology that allows you to control emissions. Let that work. Do not ban technology.

Response 158:

The commentor is correct that Teflon® has not been banned, however, the detrimental effects of PFAS and PFOS are now better understood and environmental regulatory agencies are beginning to address their use. As for lead in gasoline, it was phased out of use starting in the 1980s following discovery of its health impacts. Lead was also banned from use in paint

in 1978. There is a history of regulatory agencies banning the use of previously allowed toxic chemicals as their toxicity becomes better understood.

Please see Master Response 2. As discussed in Master Response 14, CARB's responsibility is to protect the health and welfare of all Californians by working to improve air quality. CARB does not have authority to ban cell phones or Facebook. CARB staff will continue to explore other sources of air pollution and toxic air contaminants impacting Californians and to strategize regarding methods to reduce emissions from a variety of sources. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 166:

Unfortunately, our correspondence recommended that the rule not be approved, because it didn't have strong enough efforts to make sure that the requirements would be enforced, which is of tremendous importance, something that should always be considered with any rule, but we're glad we had that opportunity. We heard many things similar during the process of getting the Rule 1469 passed.

Response 166:

CARB considered the comments regarding enforceability and included a commitment to work closely with the Districts to track and evaluate enforcement and implementation of the Proposed Amendments in Resolution 23-16, which was adopted by the CARB Board during the May 25, 2023, Board Hearing. CARB staff made no changes to the Proposed Amendments based on the received comments.

i) Environmental Justice

Comment 13-12:

1. How are the Environmental Justice values for general emissions determined for the state's website and how do they apply in this Draft Chrome ATCM? How do all the variables apply to this Draft Chrome ATCM?
2. Is hexavalent chromium captured as a separate component within the general emissions values used for Environmental Justice evaluation? Is hexavalent chromium from MFs being captured as a separate component within the general emissions values used for Environmental Justice evaluation.
3. Does the Environmental Justice value identify or determine the impact of encroachment of sensitive receptors moving toward the hexavalent chromium use?
4. Does Environmental Justice account for the direct and indirect benefit of valuable jobs being provided in the affected community? Conversely, does Environmental Justice account for the direct and indirect loss of valuable jobs in the affected community?
5. How many fewer cancer cases does CARB believe will result if the Draft Chrome ATCM is approved? How was that number determined? Is the evaluation specific to facilities or generally for the entire state? If it is for the entire state, how is that value being attributed to Environmental Justice since it is focused on specifically local emissions exposures? Are generalized numbers being spread to all locations?

6. How does Environmental Justice get affected where MFs are located more than 330 feet from sensitive receptors? More than 1,000 feet? Is distance from a source a consideration or is the evaluation solely on the risk presented?

7. How does Environmental Justice get affected when hexavalent chromium emissions are less than the risk levels deemed acceptable by OEHHA at a sensitive receptor? Would this outcome be considered acceptable for Environmental Justice?

Response 13-12:

It is not clear what the commenter means by “Environmental Justice values” and “Environmental Justice evaluation.” However, it seems that the commentor is referring to the classification of a community as disadvantaged. The responses below are based on the assumption that this is what the commenter intended.

1. CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 4.0 (CalEnviroScreen). The CalEnviroScreen scores are based on a series of indicators, which are measures of either environmental conditions in the case of pollution burden indicators, or health and vulnerability factors for population characteristic indicators.

CalEnviroScreen indicators fall into four broad groups: exposures, environmental effects, sensitive populations, and socioeconomic factors.

- Exposure indicators are based on measurements of different types of pollution that people may come into contact with.
- Environmental effects indicators are based on the locations of toxic chemicals in or near communities.
- Sensitive population indicators measure the number of people in a community who may be more severely affected by pollution because of their age or health.
- Socioeconomic factor indicators are conditions that may increase people’s stress or make healthy living difficult and cause them to be more sensitive to pollution’s effects.

Each indicator is scored separately. Information on how they are scored and how the combined CalEnviroScreen score is produced can be found in the CalEnviroScreen 3.0 report.

The classification of a community as disadvantaged is independent of CARB’s ATCMs.

2. The classification of a community as disadvantaged is not a function of exposure to one specific toxic pollutant but is based on measurements of different types of pollution that people in the community are exposed to.
3. The classification of a community as disadvantaged is based on the conditions that exist within that community at the time of the evaluation and does not account for how those conditions came to be.
4. CalEnviroScreen does account for socioeconomic factors. In order for the community to be classified as disadvantaged, it is likely that economic factors already make healthy living difficult.

5. Please see Master Response 1. In cases where a health risk assessment is conducted to model sources, like chrome platers, that vary widely in size, annual throughput and control methods, CARB staff create models to represent those variations. Because these analyses are not specific to a geographic region, census data cannot be used to specify the number of possible cancer cases. In order to predict a change in the number of possible cancer cases, staff would have to model specific geographic areas, identify all the sources in those geographic areas and collect data regarding the emissions parameters for each of those sources. Moreover, that type of analysis is only practical with pollutants, like diesel particulate matter, that affect large geographic areas. For example, that type of analysis was conducted for the Commercial Harbor Craft regulation because the data needed was reasonably available. Staff did not conduct a geographically specific analysis for the Transport Refrigeration Unit regulation because the sources were too variable and the needed data for each source was not reasonably available. Chrome plating facilities vary widely in size, control methods, and emission rates. In addition, the impacts of hexavalent chromium emissions are much more localized than pollutants like diesel particulate. In cases where a health risk assessment is conducted to model sources, like chrome platers, that vary so widely, CARB staff create models to represent those variations. Because these analyses are not specific to a geographic region, census data cannot be used to specify the number of possible cancer cases.
6. Again, the classification of a community as disadvantaged is not a function of a single source or a group of sources, so the relative location of chrome platers would not be the only factor that is considered in that classification.
7. See the answer to question 6 above.

Comment 99-1:

The proposed action before the Board is advocated by some as promoting environmental justice. While I hope everyone here is in favor of environmental justice, this action does nothing to advance that cause. In fact, it is anything but environmental justice. I think everyone would agree that simply shifting the environmental burden associated with any industrial activity from one disadvantaged California community to another disadvantaged California community does not serve as environmental justice. It is difficult then to imagine how anyone could attempt to argue that shifting the same burden to disadvantaged communities in other states or other countries, while continuing to enjoy the benefits of products of that industrial activity here in California could constitute environmental justice either. Just as the state of California rightly condemns the practice of busing immigrants from Texas and other border states to New York or Washington D.C. or Martha's Vineyard with no thought or consideration given to the welfare of those immigrants or the impact on the receiving communities, passing the buck for the sake of political theater rather than working cooperatively to solve the immigration problem, so too must we resist the temptation to pass the buck on the issue of hexavalent chromium, rather than allowing government and industry to work together to come up with solutions here in California with its proven track record of environmental progress and unrivaled innovation.

Response 99-1:

Please see Master Response 8. The goal of the Proposed Amendments is not to close chrome facilities or move them out of state, but to transition chrome plating facilities away from the use of hexavalent chromium to a less toxic alternative. The Proposed Amendments

are intended to reduce the pollution burden on all communities where chrome plating is conducted by eliminating emissions of hexavalent chromium from chrome plating operations.

Please also see Master Responses 2 and 14. Although the Proposed Amendments may result in an increase in out of state hexavalent chromium emissions, CARB staff hopes that CARB's lead in reducing the harmful impacts of hexavalent chromium emissions will be followed by other agencies. CARB is charged with the responsibility to protect the health and welfare of Californians. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 110-3, 134-2, 138-1, 152-3, 155-1.

Comment 110-3:

You guys talk about disadvantaged communities. A lot of us -- I mean, we live there. I've lived in Compton my whole life. The actual -- the pictures that you guys showed are of my middle school. You know, if you guys -- these companies have given us an opportunity to better ourselves. I think if you guys put these things in place, it's going -- it's going to ruin a lot of us, so I ask you ask guys to please reconsider that.

Comment 134-2:

My company has 108 employees, 105 of those are minorities of all kinds. Sacramento talks about jobs for minorities. Everybody out here supplies jobs mostly to minorities. Most of my employees maybe have graduated from high school or not graduated at all. We hire them, we train them, and they come along and they make good money. What you're talking about here now is killing all of these businesses that deal hexavalent chrome over the next few years.

Comment 138-1:

The opportunities that you will be taking away from the communities that are most affected by this are what you're trying to shut down, all of these people here who are supporting their families. It has given me an opportunity to support my family. we will continue to provide opportunities for Black and Brown disadvantaged White communities. These people come in. We give them training. They get to elevate through these positions to buy a home, to support their families, to give back to the economy. I know there are a number of people on the Board that said that our segment of industry is not going to have an economic impact on California, but it will have an economic impact on the people who need these opportunities. Give them the opportunity. Please do not take these opportunities away from people who want to better their lives.

Comment 152-3:

You've heard a lot of people here talking about opportunity. Don't take away the opportunity for these people in disadvantaged and all communities to come into industries such as ours to learn a skill that can help them and their families go on to live a good prosperous life.

Comment 155-1:

I've been in the industry for almost 40 years and I've seen -- we've been talking about social justice. Here's the exact opportunity or example of it. You've seen people that have walked in the door with no skills and worked them way up through, you know, into management. I

even know people that have walked in with no skills that are now shop owners. They own the shops. So this is amazing. This industry is an opportunity. You don't -- you don't have degrees. You don't get a degree and come to be a plater. You have to learn this.

Response 110-3, 134-2, 138-1, 152-3, 155-1:

Please see Master Response 8. The goal of the Proposed Amendments is not to close chrome facilities or move them out of state, but to transition chrome plating facilities away from the use of hexavalent chromium to a less toxic alternative.

Please also see Master Responses 2 and 4. In response to industry concerns such as those voiced in these comments, the Proposed Amendments provided decorative and functional chrome plating facilities with additional time as compared to the initial Proposed Draft Regulatory Text, which was posted in July 2021, to identify or innovate appropriate replacements so that they can continue to provide their services and employ staff. CARB staff made no changes to the Proposed Amendments based on the received comments.

j) Legal

Comment 13-24:

CARB HAS VIOLATED THE ADMINISTRATIVE PROCEDURES ACT -DEMAND FOR NOTICE AND OPPORTUNITY TO BE HEARD California's Administrative Procedure Act ("APA"), like its federal counterpart, provides the formal procedures by which the executive branch agencies must conduct their rulemaking activities. There are essentially two main purposes of the APA. The first is to give notice to persons affected by a regulation. The second is to give them a voice in its creation. *Missionary Guadalupanas of Holy Spirit, Inc. v. Rouillard* (2019) 251 Cal.Rptr. 3rd 1, review denied; *Morning Start Company v. State Board of Equalization* (2006) 38 Cal. 4th 324; *Reilly v. Superior Court* (2013) 57 Cal. 4th 641.

In this case, CARB has effectively ignored the persons who will be most affected by the proposed rule for hexavalent chromium emissions. Substantial written comment has been submitted to CARB, with zero substantive response. CARB has conducted zoom meetings in place of traditional in person public meetings on the proposed rule. The zoom meetings have allowed CARB staff to control what information is discussed, limit the time and number of persons able to participate, and generally run "roughshod" over the entire public comment process. In short, CARB has violated, and continues to violate, California's APA.

MFACA demands that CARB establish a new rulemaking schedule for the proposed rule at issue, to ensure that the persons most affected by the rule have legitimate and real discussions with CARB staff, receive substantive feedback on relevant technical and economic data, and have proper in person public meetings to discuss all of this critical information.

Response 13-24:

Please see Master Response 13. CARB held numerous workgroups and meetings with stakeholders to discuss the development of the Proposed Amendments prior to the publication of the 45-Day Notice. CARB staff have received more than 200 comments from industry and members of the public during the public comment periods. CARB staff are providing formal written responses to all comments through this FSOR and the Response to Comments to the Draft EA, which is consistent with the requirements of the Administrative

Procedures Act. CARB staff made no changes to the Proposed Amendments based on the received comments.

CARB staff have found that the use of virtual meeting platforms, such as Zoom, have made it easier for interested parties to attend meetings of all types. Virtual meetings don't require travel and make it possible to include many more participants than the limits of a physical meeting space. Further, virtual meetings allowed continued participation throughout the pandemic, including by individuals who are particularly susceptible to the health impacts of COVID-19. Although these workgroup meetings do have stated goals and agendas, CARB staff have always been willing to discuss all topics that are brought up by participants in those meetings, even if those topics fall outside of the agenda.

Comment 13-25:

FLAWED STANDARDIZED REGULATORY IMPACT ASSESSMENT ANALYSIS CARB is required to prepare a Standardized Regulatory Impact Assessment ("SRIA") analysis that complies with the requirements set forth in Government Code Sections 11340 et seq. and Division 3, Chapter 1, Division 3, Chapter 1, Section 2002 of the California Code of Regulations. On June 24, 2022, the California Department of Finance ("CDOF") issued a letter to CARB. (See Attachment A.) The CDOF's letter to CARB documents that CARB, even at this late date, has failed to address key concerns the MFACA has consistently and repeatedly emphasized. For example, the CDOF letter provides, in part:

"First, the SRIA does not expect any business closures in response to the proposed regulations, nor does it discuss any potential competitive disadvantages to California's chrome facilities, despite acknowledging stakeholder concerns regarding the availability of alternatives.

However, unavailable or inferior alternatives may reduce the demand for in-state chrome services and instead incentivize consumers to switch to out-of-state businesses who would still be able to utilize hexavalent chromium processes."

The CDOF letter goes on to state that CARB's SRIA must include a comprehensive assessment of the potential business and employment impacts, including a discussion of these potential behavioral responses to the proposed regulation, or further justify why it is reasonable to assume these adverse impacts would be unlikely to occur.

The MFACA concurs in the CDOF's assessment of CARB's SRIA, and demands that CARB move expeditiously in an open, public and transparent process to respond to the CDOF letter with fact-based information on the issues it has raised. We will be contacting the CDOF separately to ensure that these actions are taken by CARB.

Response 13-25:

Please see Master Responses 1 and 8. Through the normal regulatory development process, CARB staff responded to comments from California Department of Finance (CDOF) prior to the release of the 45-Day Notice, see Appendix C2 of the ISOR. Since the time that this comment was submitted, CDOF has approved the SRIA for the Proposed Amendments.

As discussed in Master Response 8, the SRIA contains a thorough analysis of potential decreases in demand for in-state chrome services and potential business and employment impacts that could occur as a result of the Proposed Amendments. The REMI model cannot directly estimate how many of the 113 facilities identified by CARB will cease business in

California. However, based on the stakeholder feedbacks, staff performed a sensitivity analysis depicting a range of percentages of chrome plating demand leaving California. CARB staff made no changes to the Proposed Amendments based on the received comments.

C. Comments Received during the First 15-Day Comment Period

1. Comments in Opposition to the First 15-Day Notice Changes

a) Appendix B

Comment 178:

The previous appendix B Table 2 on Line 3 "Hard with Add-On" showed the computation of the average source test value used in Table 1 of Appendix B above it. The calculation included results from seven tested facilities. The values were:

As shown previously

Test 1 0.00045

Test 2 0.00011

Test 3 0.001

Test 4 0.00034

Test 5 0.00063

Test 6 0.0002875

Test 7 0.0013

Average 0.000588214

Now, I don't know if the facility source test values you used above are correct or not but I do know math and the math appears to be a correct computation of the average of the values shown.

In your now corrected emission inventory put out this morning, your team is using a value of 0.0000588214 as the source test value for hard chrome. I know that you know that 0.000588214 is a magnitude of 10 times greater than the 0.0000588214. So, what changed? Your team has not included a revised Table 2 with the data release from this morning. Therefore the 0.0000588214 is an unsupported value since it does not correspond to the yet to be corrected Table 2 of Appendix B. The official record supporting a hex chrome emission rule contains this critical 10X uncorrected error which is a building block of the current emissions of the industry.

I recommend CARB introduce a quality assurance function. Those of us who are in the aviation safety business (until 2039) have found value in having a second set of eyes inspect work before it goes out.

Response 178:

Please see Master Response 11. CARB staff have revised this value to correct the identified error and made the revised emission inventory available for a 15-day comment period through the Second 15-Day Notice.

The following comments expressed related concerns: 179, 180, 186-1, 187, 191-2, 195-1, 197-1, 197-2, and 197-9.

Summary of Comment 179 et al.:

The comments below generally address the changes to Table 1 of Appendix B that was revised as part of the First 15-Day and Second 15-Day Notice. The comments are presented in their entirety and are responded to in a single response.

Comment 179 and 180:

According to the March 27 modification of the Emissions Inventory, the STATEWIDE hex chrome emissions of the ENTIRE METAL FINISHING INDUSTRY in 2019 were 0.19 pounds. You can verify this by referring to attachment 2, page 22, lower right cell in the table.

It is helpful to contrast this with the hex chrome emissions reported in Paramount, California in 2017 from just two sources;

Carlton Forge at 0.6 pounds and Press Forge at 0.3 pounds. That is just in Paramount. You can verify this yourself by going to CARB's website here (https://www.arb.ca.gov/carbapps/pollutionmap/?_ga=2.123164547.925282913.1680112885-1134180171.1680112885#) and using the pollution mapping tool CARB provides. Please use the filter criteria on the left and select pollutant = hexavalent chromium, City = Paramount, and Year = 2017.

Please keep this in mind when you hear CARB staff tell you fugitive emissions from metal finishers were the problem in Paramount. The emissions were observed from Metal Processors (See list here: <http://publichealth.lacounty.gov/eh/chromium6/directive.htm>) of which only two of the nine Metal Processors were Metal Finishers (Anaplex and Lubeco).

So, again, Carlton Forge and Press Forge reported emissions totaling 0.9 pounds just a few blocks from the metal finishers whose entire industry statewide emitted a fraction of that total. CARB is making no attempt to ban hex chrome emissions from Carlton Forge which is owned by Warren Buffet. But then, that might be a bit more difficult for CARB.

STOP THE BAN.

Please note that the modification of the Emissions Inventory enabled this public comment and it is therefore pertinent for inclusion in the board's considerations. I reserve the right to modify this comment if CARB staff amend the emissions inventory for a third time.

Comment 186-1:

Contempt prior to investigation is the best way to summarize the latest revisions made to the proposed amendment to the ATCM. CARB's presentation from June 2022 stated that "Chrome Plating emissions account for less than 1%" in the State of California. The slides presented to the public showed our Industry responsible for 10 lbs annually of Hex Chrome. Now in March 2023, CARB has stated we are .19 percent and approximately 1 lb annually.

The CARB Board and public have been mis-informed. Several journalists have published articles with the inaccurate data quoted directly from CARB's presentations. Our Industry has been prejudicially singled out and the proposed BAN renders our assets to CARB's favorite word "ZERO".

Comment 187:

The CARB board has a responsibility to hold staff accountable for accurate data to base this rule making process that will affect the lives of thousands of people here in the state and beyond. To date the emission rate data that's been shared have been flawed, therefore it is impossible for the board to make an educated decision on this very aggressive rule.

Using staff's table III.1 as an example, why are we even looking at estimated emission rates? Local air districts have actual reported amp hours and emission rates as required by law. CARB staff must input the correct data to comprise a true representative sample of industry emissions, only then would the board have the information required to make a decision that will impact so many lives.

The first working group meeting was held Sept. 11, 2020, and still we are being presented with flawed emission rate numbers. Initial data submitted by staff for this rule was the Chrome Plating Industry as a whole emitted 10.15 lbs. of hexavalent chrome annually. That information was shared with the public and created an outcry within communities and environmental groups. Now in the 15-day comment period, data is shared and emission rates are 0.19 lbs. annually, but the damage has already been done.

CARB Board members must hold staff accountable to provide accurate information regarding emission rates before a decision is made that will affect so many lives and jobs here in California. As a CEO of a company, you would require your staff to present accurate data for the basis of making a decision that will impact your business livelihood and that of your employees. Inaccuracies would not be tolerated, but CARB staff faces no consequences for reporting these inaccuracies or failing to provide requested information to stakeholders.

I urge the Board to delay this rulemaking process until such time as the true emission numbers have been calculated using accurate amp hrs. and source test emission rates as reported to local Air Districts.

Comment 191-2:

CARB staff have misled the public and the CARB board about the proposed Hex Chrome ATCM. The "Appendix B – Emissions Inventory" presents incorrect data about facility permit levels and emissions.

A reasonable person who reads the "Appendix B - emissions inventory" would conclude that California chrome platers commonly violate their permitted emission levels. The published emissions inventory shows that more than 20% of chrome platers exceeded their permit level in many cases by very large margins. This is false and it has led the public to believe chrome platers are irresponsible violators. Three months ago, CARB notified the Metal Finishers Association that a member of the public had notified CARB that the published Emissions Inventory was incorrect. CARB agreed and cited a "spreadsheet error" as the cause. Despite this notification to the victim of the misinformation, CARB did not inform the public of this error, nor the media, nor has it provided a corrected emissions inventory to this day. The public has been deprived of the opportunity to make educated comment during a 60 day

public comment period. The CARB board has been deceived. It is reasonable to conclude that public perception about chrome platers compliance with permit levels is now set. It will be difficult to change the public perception. It is astounding to me that incorrect data purporting to be an "emissions inventory" has been allowed to persist uncorrected in the public record during a rulemaking about those emissions, ... while the central advocacy of the Metal Finishers Association was for an emissions-based rule. If truth is part of the CARB mission, you should direct staff to correct the data immediately. Lacking that, please take down the incorrect data and provide notice to the public that they have been viewing incorrect data since November 29, 2022. Isn't the most pertinent data in an emissions rulemaking the emissions data?

Comment 195-1:

Flawed Data – The Board's emissions data are flawed, inaccurate, and inconsistent in the record both as originally presented and in the subsequent 15-day Notice of proposed changes. This information is critical in understanding what the ATCM is regulating and what restrictions would be justified.

The Staff has had three years to correct this data and the surface finishing industry has provided continuous input that has not been effectively addressed. Even the "corrections" made to this data as part of the 15-day Notice are flawed and inaccurate. The emissions data are the foundation for the rule, and therefore, critical for all the analysis and justifications that are based on this information. For example, the corrected data inaccurately claims that emission from decorative processes equal those from functional plating processes. Without correct information, the conclusions drawn by the Board will be based on flawed assumptions, presenting a situation where any approval will be subject to potential legal challenge.

This erroneous compilation of data is a fundamental flaw and misunderstanding of the hexavalent chromium processes, despite the fact that industry has repeatedly identified these flaws for the Board and provided real-world actual emissions data from the Board's own records.

In addition, the update appears to claim significant benefits for emissions reductions that may not even be mathematically possible based on the small amount of actual emissions of hexavalent chromium from the finishing industry. Specifically, the Initial Statement of Reasons [ISOR] and Standardized Regulatory Impact Assessment [SRIA] claim reductions of 10.15 pounds per year in 2039 but the latest update to the emissions inventory shows total industry-wide emissions of only 0.19 pounds per year. If the foundation for the rule's analysis and justifications are flawed and inaccurate, then all the analysis and justifications for the rule are meaningless. Applying inaccurate information to reach a particular conclusion appears to be arbitrary and demonstrates a substantial lack of knowledge and understanding of the industry that will be impacted by this amendment of the ATCM.

The Board must first correct the emissions data and conduct a totally new cost and benefits analysis for the rule based on the corrected information, and then provide an appropriate opportunity for notice and comment of these critical revisions. Otherwise, the Board will have failed to meet its statutory requirements for developing a rule to govern this industry.

The Table I data was included and then almost immediately excluded from the ISOR because stakeholders alerted staff that it was flawed. The staff response was that the table would be corrected in the 15-day document. While it is revised, it remains fatally flawed, Table 2 shows

the calculation of the hard chrome source test average but the hard chrome source test average in Table 1 does not match Table 2. There are other issues as well. The reason for amending the ATCM should be clearly and accurately stated before proceeding with rulemaking.

The goal of this rulemaking process has been to develop an accurate picture of the industry's plating emissions. Facilities are required to report to their respective districts, both annual tank amp-hours [amp-hr] and source tested emission rates [mg/amp-hr]. The Board has the authority [we argue, the responsibility] to gather this information from the districts and make this available in the rulemaking. Staff has had over 2.5 years to obtain pertinent data from the local agencies. We have requested data and have only received 2019 amp-hr usage data but have never been provided accurate source test data that may or may not have been part of the staff's evaluation. Repeated requests to staff for source test data have yielded nothing.

The amp-hr data that was released as part of this rulemaking is from 2019. This data is not up to date. Some facilities have gone out of business, others have added HEPA filtration since this data was developed. There are discrepancies between amp-hr data released before and the present time that are on the order of hundreds of thousands of amp-hrs.

It also appears several facilities may have had no reported throughput data, and staff used their exact maximum permitted amphrs rather than indicate the Board had no data.

To obtain the most accurate picture of the industry's annual emissions each facility's throughput [amp-hrs] and source tested emissions factor [mg/amp-hr] need to be used. Staff gathered minimal source test information and then simply averaged the few data points to categorize the entire industry. There has not even been an attempt to weight the average with facility amp-hrs [i.e. source test data from higher amp-hr facilities are weighted heavier]. Staff requested source test data from at least one facility. While the facility provided the data, staff did not use it in its computation of the hard chrome average. From our calculations, this information would have lowered the average, and the failure to include it is arbitrary.

There are obvious issues with the "average" source test data, as well. First, there is what appears to be a typographical error of the average hard chrome source test emission factor in the "corrected" table. See Attachment 2, Table 1. Our review of this information found that the average calculated to 0.000588 mg/amp-hr. The value used in the table is 0.0000588 mg/amp-hr. This additional zero yields a dramatic difference in the calculated emissions. Second, the "average" source test emission factor for chromic acid anodize facilities is based on a single point that is impossibly low [0.000000029 mg/amp-hr], something that is not appropriate when performing mathematical evaluation (i.e., an average cannot be based upon a single point). Third, for decorative chrome platers, staff uses either the average of three tests of add-on controls or the default (fume suppressant only) and a maximum allowable default of 0.01 mg/amp-hr. Again, many of these decorative chrome plating facilities now have HEPA, which would dramatically reduce the resulting emissions.

Over the course of the development of the modifications to the ATCM, inaccurate and ever-changing data has been set forth in the documents. This has affected the Board, the press, the public and this rulemaking. It supports a perspective that a decision was already made to impose bans regardless of the facts. It also renders earlier published materials as highly inaccurate and creates a scenario where the original textual information cannot be used to support the original conclusions. The late inclusion of data and some tabular

correction does not repair the fundamental changes necessary for the documents to be accurate. A fundamentally flawed record is not substantial evidence, and any decision based upon it would be an abuse of discretion.

Comment 197-1:

New information published as part of the Notice of Public Availability of Modified Text and Availability of Additional Documents and Information on the Proposed Amendments to the Airborne Toxic Control Measure [ATCM] for Chromium Electroplating and Chromic Acid Anodizing Operations (the "Proposed Amendments") (hereinafter the "Supplemental Notice" or "SN") identifies three significant problems with the Proposed Amendments. First, this information demonstrates that actual hexavalent chromium emissions from chrome plating facilities are much lower than previously reported and have not been properly analyzed or corrected throughout the Record. Second, because the newly reported hexavalent chromium emissions from chrome plating facilities are much lower, the Proposed Amendments, if adopted, will increase the existing amount of hexavalent chromium emissions in California, endangering public health. Third, the new emissions inventory that replaced a prior version, continues to contain errors and improper assumptions, which lead to confusion and improper conclusions, thereby undermining the accuracy of the information that is the cornerstone of the Proposed Amendments and all their assumptions.

Based upon the foregoing issues that fundamentally affect the legality of the Proposed Amendments as presently prepared, the MFACA respectfully requests that CARB: (1) Withdraw the Proposed Amendments from their presently scheduled hearing; (2) Meet with the MFACA commenting parties to discuss further alternatives to an absolute ban including risk (based on existing local limits) and proximity, in light of the information and issues set forth in this letter; (3) Provide the MFACA commenting parties with all data, including source test information, that CARB has failed to provide to date and (4) Re-do its analyses and justification for the Proposed Amendments based on the corrected/revised emissions data and permit hexavalent chrome plating facilities and other stakeholders a meaningful opportunity to review and provide comments on the revised analysis and justification for the Proposed Amendments.

Based upon the foregoing presentation, new information published as part of the Supplemental Notice identified problems with the Proposed Amendments as the Record currently exists. New data showing dramatically lower actual emissions has been noted, but the analysis in the Record has not been updated. Moreover, the lower values have not been evaluated and compared to the significant increase in excess hexavalent chromium emissions that would be generated due to increased transportation. The accuracy of the Record currently is in question, particularly since there appears to be errors in the emissions inventory.

We believe the issues as outlined in this letter fundamentally affect the legality of the Proposed Amendments as they presently exist. The MFACA believe it appropriate to withdraw the Proposed Amendments at this time from the scheduled hearing as well as meet with the MFACA commenting parties to discuss pathways to move this issue forward and to provide available data. We believe that analysis on these Proposed Amendments must be re-done based on accurate emissions data so that the regulated community and other stakeholders are provided the most accurate information possible to protect human health and the environment in California.

Comment 197-2:

To properly frame our comments to the Notice of Public Availability of Modified Text and Availability of Additional Documents and Information on the Proposed Amendments to the Airborne Toxic Control Measure [ATCM] for Chromium Electroplating and Chromic Acid Anodizing Operations (the "Proposed Amendments") (hereinafter the "Supplemental Notice" or "SN"), some background information, which is only implied in the Record, needs to be established and stated explicitly concerning the total universe of annual hexavalent chromium emissions in pounds within California. The ISOR (produced within the Notice) describes the statewide annual emissions of hexavalent chromium as being generated by 91% mobile sources, and 9% from non-combustion sources (i.e., stationary sources). ISOR at pages 177, 182. Staff estimates 0.4 percent of the hexavalent chromium emissions from all emission sources originate in chrome plating facilities (and approximately 4% of the 9% non-combustion sources). ISOR at page 182. According to this same ISOR, all chrome plating facilities actually emit 2.2 pounds per year. ISOR at page 188, Table VI.1.

From this presented information in the ISOR, one may determine the universe of annual hexavalent chromium emissions in California to be as follows:

$2.2 \text{ pounds per year} / 0.004 [0.4\%] = 550 \text{ pounds per year}$

As stated in the ISOR, only 0.4% of all California hexavalent chromium emissions are deemed to originate from chrome plating facilities, meaning the universe of statewide hexavalent chromium emissions total a rather substantial 550 pounds per year.¹

After completion of the ISOR and following the January 2023 hearing, CARB staff completed the Inventory and issued a new Table VI.1. in the Supplemental Notice. SN, Attachment 2, at page 24. In that new Table VI.1, the actual emissions from all chrome plating facilities total 0.19 pounds per year, not 2.2 pounds per year as previously reported. Id. This fundamental change in value, which is now revised to be more than 11 times lower, alters the prior evaluation of emissions explained in detail throughout the ISOR. Specifically, this lower emissions value must now be compared to the known statewide hexavalent chromium emissions (i.e., 550 pounds). The new value of annual hexavalent chromium emissions from chrome plating facilities is no longer 0.4 percent of the total as previously reported in the ISOR but is the following:

$0.19 \text{ pounds per year} / 550 \text{ pounds per year} = 0.00035 [.035\%]$

Considered another way, the annual emission value for all chrome plating facilities now represents approximately 0.35% of the total non-combustion sources. In other words, the focus of these Proposed Amendments, and their proposed ban, is focused upon a minute fraction of the total statewide emissions of hexavalent chromium, whether this fraction be considered for the total emissions or just emissions from non-combustion sources.

What is probably more troubling about this new information found in the Supplemental Notice is the failure to re-evaluate and correct the entire Record to reflect this fundamental change that alters every understanding of the risk and exposure found in the Record, from the original ISOR and subsequent CARB staff testimony, to the California Environmental Quality Assessment ("CEQA") determinations and the Standardized Regulatory Impact Assessment ("SRIA") evaluation. Without a complete and thorough re-evaluation and correction, it is impossible for the CARB decisionmakers to make a knowledgeable determination and decision on the Proposed Amendments. Any subsequent court action for

abuse of discretion under a “substantial evidence” standard would by necessity consider this fundamental change carefully when reviewing a fatally flawed record.

This new emissions inventory and actual emissions are significant to the Record and require a re-evaluation of every aspect that has been prepared, including the assumptions that underlie the need for a ban of chrome plating facilities. These assumptions can be summarized with a pair of quotes from the ISOR:

It [hexavalent chromium] was identified as a compound that has the potential to cause cancer with no associated threshold for cancer initiation. This means there is no level of emissions below which exposure to hexavalent chromium would be safe....

Due to the high toxicity level of hexavalent chromium, the health impacts of exposure to hexavalent chromium, the proximity of chrome plating facilities to sensitive receptors and disadvantaged communities, and following extensive evaluation of air monitoring data, a zero-emission level is necessary to prevent an endangerment of public health. ISOR at pages 1-2, and 5.

As noted below, the first statement above is inconsistent with CARB’s own posted information. *Supra*, at page 6. Concerning the second statement, each point can be considered and refuted based upon the new emission inventory (SN, Attachment 2, Table 1 at pages 3-22), revised Table VI.1 (SN, Attachment 2, Table VI.1) and further information produced in the Supplemental Notice. For the reason sets forth herein, a zero-emission level is neither necessary, nor warranted.

¹ If CARB is applying a higher value to the chrome plating facilities based on estimated emissions, then the statewide universe of hexavalent chromium emissions is substantially larger too. For the purpose of this comparison in the ISOR, CARB staff used actual emissions, not hypothetical or potential emissions. If hypothetical emissions (e.g., 10.15 pounds of annual hexavalent chromium emissions) had been used as they were in other parts of the Record, the statewide hexavalent chromium emissions would have increased to over 2,537.5 pounds.

Comment 197-9:

The Notice of Public Availability of Modified Text and Availability of Additional Documents and Information on the Proposed Amendments to the Airborne Toxic Control Measure [ATCM] for Chromium Electroplating and Chromic Acid Anodizing Operations (the “Proposed Amendments”) (hereinafter the “Supplemental Notice” or “SN”) provides an amended emissions inventory (ISOR, Appendix B, revised Table 1) as well as a summary of that information at Table VI.1. Much of the issues set forth in this letter consider the significant downward revision of actual emissions from 2.2 pounds per year to 0.19 pounds per year. A further review of the detailed data, however, finds that the new information is also incorrect.

We note the amended emissions inventory includes at least one calculation where a value appears to have been incorrectly included as 0.0000588 as opposed to 0.000588. Cf. SN, Attachment 2, Table 1 at pages 17-22, Average Source Tested Emission Rate (Facility Type - Hard) at pages 17-22 versus ISOR, Appendix B, Table 2 page 15, Test Emission Rate, (Hard with Add-on). That single error alone has significance. There are other figures as well as arbitrary default assumptions that should not have been applied.

The information, if revised to the original ISOR number, alters the actual emissions total to a higher value, coming closer to one pound. The value remains more than two times lower than

the ISOR reported amount, but five times higher than the SN reported amount in Table VI.1 for actual emissions. This additional change in the data confounds any understanding of what the information should really mean. This issue is exacerbated by the inability of the MFACA to obtain source test and other public data that would provide meaningful evaluation of actual emissions. Taken in light of the issues mentioned previously in this letter, it strongly suggests that CARB start at the beginning to re-evaluate the Proposed Amendments for chrome plating facilities. The Record is hopelessly deficient and defective. No cogent decision could be made upon it and any attempt to do so would be the basis of a legal challenge.

Response 179 et al.:

Please see Master Responses 1-3, 8, 9, and 11-13. In addition, CARB staff disagrees with the commenter 197-2's calculations since they are based on information that has since been updated (see Master Response 11). Even if the commentor had used the updated value of 1.05 lbs/year from the Second 15-Day, CARB staff would still disagree with commentor's conclusions. CARB staff disagree with the back calculation method used by the commentor because it oversimplifies the calculation. Additionally, the emissions do not include potential fugitive emissions (see Master Response 12).

In response to comments that CARB has not provided requested information to stakeholders, CARB staff have responded as required by the law to Public Records Act requests submitted by members of industry. The Metal Finishers Association of California submitted a Public Records Request on July 18, 2022, and CARB staff have been producing records on a rolling basis in response. In addition, CARB staff received a public records act request from a member of industry on April 11, 2023, and produced the source tests requested on May 2, 2023, prior to the submission of the comment indicating that records had not been provided. CARB staff followed up with the requestor on May 17, 2023, who then realized that the source tests had gone into his spam box.

b) Health Risk Assessment

The following comments expressed related concerns: 182, 185, 191-1, 195-2, and 197-7.

Summary of Comment 182 et al.:

Portions of these comments are not specifically directed at the changes in the First 15-Day Notice; therefore, CARB is not required to respond. However, CARB staff will address the comments regarding the potential cancer risk value of 213 chances/million. The comments are presented in their entirety and are responded to in a single response below.

Comment 182:

The staff presentation to the Board on January 27 contained two slides which referred to a "213 in a million" cancer risk from chrome platers. The "213" value comes from Table F.14(b) in appendix F page 28. Table F.14(b) shows the cancer risk from large hard chrome facilities without controls, and maps the cancer risk using two variables, throughput, and proximity.

Considering there are ZERO facilities in California with throughput at 120,000,000, and likely ZERO hard chrome facilities operating without HEPA controls, and ZERO facilities of anywhere close to that size that are 5 meters from a residential source, CARB's allegation of a "213 in a million" cancer risk from chrome plating is a complete FALSEHOOD.

Unfortunately, the LA Times picked it up and has published it as a general description of the cancer risk from large chrome facilities.

I challenge CARB to spend a few minutes and locate the facility that has the highest cancer risk in the state using Table F.14(b) (proximity and size) but also in consideration of the HEPA controls that facility operates with, and tell the public what the real truth is about the maximum cancer risk at the highest risk real chrome plating facility in California. The answer will not be 213 in a million.

This comment is not about any modifications to the rule that were published on March 27. It is about incorrect cancer risk contained in CARB materials presented to the board on January 27 and which influenced the board's feedback to the staff on that date. Page 24 of the presentation states "Controlled Tanks". Table F.14(b) contains information about uncontrolled tanks.

Comment 185:

Now that we can see the corrected emission inventory...

On page 37 of this presentation *here* CARB defined large functional platers as "hard chrome platers W/ Add-On Controls".

On page 38, they show that Large functional platers (defined above) have a cancer risk of 213 in a million.

In the posted appendix F, Table F.14(b) CARB shows that a cancer risk of 213 in a million is derived from a facility assumed to be 0 meters from a receptor with throughput of 120,000,000 amp hours and an emission rate at the ATCM limit of 0.0015. The emission rate of 0.0015 is not the emission rate of a facility with Add-On Controls.

Large chrome platers in California have HEPA systems as required by the Air Districts. There is no such facility in California with 120,000,000 amp / hours located 0 meters from a residential receptor, without a HEPA system. Zero.

The highest risk facility has a throughput of 116,500,000, is located 40 meters from a residential receptor, and has a HEPA system. The HEPA system efficiency of that facility is unknown by this writer but CARB's posted materials contain two statements about HEPA control efficiency. Table 1 of the emission inventory states 0.0000588, and Table 2 of the emission inventory states 0.000588. Using these values, we can calculate that facility has a cancer risk between 6 in a million (Table 1 HEPA efficiency) or 60 in a million (Table 2 HEPA efficiency). (As an aside, yes it would be helpful if CARB would correct this previously identified discrepancy between the two HEPA efficiency numbers in their posted materials).

Page 39 of the presentation is highly inaccurate in several respects as we can now determine from review of the emission inventory just released by CARB. Yet this seems to be the basis for statements in the ISOR and SRIA and made to the board on January 27.

The presentation referenced above was made to a public workshop on June 9, 2022 and was (I am sure) troubling to the public and environmental justice communities who viewed it. They were misinformed.

The advocates for this rule have been misinformed. The media have been misinformed. An industry has been damaged. Large chrome platers with HEPA controls have been damaged.

CARB. What is your response?

Comment 191-1:

The attached was sent to CARB staff, Cliff and Chang, via USPS certified mail, return receipt requested and via email. A receipt was returned for the Chang letter. Cliff acknowledged by email that he had passed it to staff. This posting is to make the CARB board aware of it.

The materials posted in this 15-day period show that the largest and (according to CARB) the riskiest chrome platers in the state have cancer risks well below 10 in a million considering proximity and control system efficiency. Yet CARB is trumpeting to the public, to the EJ communities, and to the media that the cancer risk is 213 in a million.

Will the CARB board see through the deceptions? or will the CARB board tie itself to the CARB staff and join the deceptions?

CARB credibility is on the line. Quite honestly, it is noteworthy that this has been allowed to persist this far.

The January 27 staff presentation to the CARB board overstated the cancer risk from chrome plating as 213 chances per million. CARB staff has repeatedly advertised the toxicity of hex chrome emissions to the public as "500 times more toxic than DPM" but has undercut its own rhetoric by not taking equivalent action on the 98.7% of hex chrome emissions in the state not associated with chrome platers. The same toxic emissions are apparently not as toxic when emitted from refineries, cement plants, and powerplants.

A reasonable person hearing CARB's repeated assertions that "Hex Chrome is 500 times more toxic than Diesel Particulate Matter" will interpret this as a statement of risk and not of potency. They perceive that Hex Chrome must be killing them as they are already very familiar with the abundance of DPM in their communities. The hex chrome toxicity statement is used to provoke fear and divert attention. The establishment of fear disguises other inaccuracies and mis-directions in the materials supporting this ATCM which I will not take the time to name here. This messaging by CARB is clearly intentional but CARB knows that cancer risk is the combination of toxicity and dose. It is misleading to the layman to be presented with only toxicity information in the context of a more overarching health concern about cancer risk. If CARB believes a comparison to DPM is most helpful for understanding, CARB should also report the difference in prevalence between DPM and Hex Chrome. The AQMD MATES V study is useful here. See MATES V Appendix IX 88. It informs us that DPM has produced a cancer risk of 306.3 in a million while hexavalent chrome has a cancer risk of 7.13 in a million across the geographic area encompassed by MATES V. Backing through the math, this means that DPM is 4,520 times more prevalent (dose) than Hex Chrome. CARB staff has access to this information but is consciously choosing to mislead public perception about hex chrome cancer risk. So, it is not a surprise that CARB behavior doesn't match the rhetoric. In fact, according to CARB, 98.7 % of statewide hex chrome emissions don't come from chrome platers, yet CARB pursues the smallest source (platers) anyway. A true concern about toxicity would drive a different behavior than we see from CARB. Despite effective HEPA controls which have been in place within the chrome plating community for more than 20 years, CARB seeks to ban chrome platers but has not proposed any ban of hex chrome emissions from refineries, cement plants, or other types of major hex chrome emitters.

In the January 27 presentation to the board, CARB staff showed a chart stating that emissions from chrome platers have an upper bound cancer risk of "213 in a million".

Individuals who spoke to the CARB that day were asked to take an oath prior to speaking. The "213 in a million" statistic is not correct. The LA Times editorial board has subsequently picked up that "213 in a million" probability and stated it as fact to support an editorial argument in favor of CARB's proposed ATCM. Specifically, they stated "large chrome-plating facilities have an estimated cancer risk of about 213 additional cases per 1 million people." A quick reference to Appendix F.14(b) on page F-28 and Appendix B reveals there is absolutely no factual basis for CARB's 213 in a million number. Why? Because there are exactly zero facilities that operate at or above 120,000,000 amp/hours per year in California. If such a large facility did exist, it would need to be operating without HEPA systems which would be in violation of most air district rules. Additionally, it would need to be operating within 16 feet of a receptor. There is no such facility in California! This is an entirely theoretical construction of a set of numbers, that in fact, do not represent any facility but are used strategically as the baseline from which this entire effort is being justified! It is plainly wrong. Yet CARB staff have spread it to the CARB board, to the public, and now to the media who have amplified it and used it to construct and recommend support for your proposal.

CARB must immediately move to correct the public record and refute this number which has fooled even an experienced LA Times environmental editorialist.

My business, Aviation Repair Solutions, Inc. is damaged. By virtue of operating at more than 1,000,000 amp/hours annually, we have been portrayed by CARB and the LA Times as a "large chrome plater". The informed public by virtue of referring to CARB's presentation and by reading the LA Times could easily perceive us as creating a "213 in a million" cancer risk. Yet the same F. 14(b) chart reveals that based only upon our size and distance from receptors, our risk is only 1 in a million and this doesn't even account for the efficiency of our HEPA system which operates 65 times more efficiently than the emission rate CARB used to construct this chart! This is an egregious assault on our reputation. I recommend you contact the LA Times to demand a retraction of their editorial.

Comment 195-2:

Safe Level - The proposed modifications to the ATCM demonstrated that the Board is firmly entrenched in the attitude that there is no safe level of hexavalent chromium. The staff presentation to the Board on January 27 contained two slides which referred to a "213 in a million" cancer risk from chrome platers. The "213" value comes from Table F.14(b) in appendix F page 28. Table F.14(b) shows the cancer risk from large hard chrome facilities without controls, and maps the cancer risk using two variables, throughput, and proximity.

Considering there are no facilities in California with throughput of at least 120,000,000, and likely no hard chrome facilities operating without HEPA controls, and no facilities of anywhere close to that size that are 5 meters from a residential source, the Board's allegation of a "213 in a million" cancer risk from chrome plating is not supported. Moreover, its inclusion in the report and as part of this rulemaking leads to false evidence of exposure and is capricious. It serves to generate fear that ultimately results in more pressure to bear on CARB for rule attributes that are not science based (e.g.. A ban prior to technology invention).

Comment 197-7:

The revised emissions values found in revised Table VI.1 go directly to another point of concern; specifically, the issue of proximity of these emissions. If assumptions on exposure

are based upon the potential emissions as opposed to the actual emissions, then the assumptions on risk are erroneous as they dramatically overstate the actual risk.

Taken one step further, the ISOR takes pains to identify the percentage of facilities that are close (in staff's view) to schools and sensitive receptors. There is much said in the Record about the percentages of chrome plating facilities located near these receptors, as well as being generally in locations identified per AB 617.¹⁸ The resultant conclusion, and the Proposed Amendments proposal is to ban all chrome plating facilities.

What is lost in this rush to a complete ban is both an evaluation of the lower emissions of revised Table VI.1 at all locations, and equally important, a further consideration of the chrome plating facilities that do not trigger any of the sensitivities noted by CARB staff. The Record does not conclude that 100% of the facilities are exposing anyone, let alone a sensitive receptor or disadvantaged community. The idea of an absolute ban that makes no consideration for facilities that, by the Proposed Amendment's own evaluation, are not causing any risk to the public, seems arbitrary and beyond the basis of substantial evidence.

The ISOR identified a serious concern reflecting the proximity of a major hexavalent emission source to a sensitive receptor. Specifically, the ISOR states: Figure V.2., below, summarizes the progressive reductions of potential individual resident cancer risks from the 2019 baseline to year 2039, under the Proposed Amendments. The estimated cancer risks associated with emissions of hexavalent chromium are calculated at near-source receptors downwind from the edge of facility building. In 2019, the potential cancer risk from large functional platers is estimated at about 213 chances per million... . ISOR at page 174.

CARB staff reported to the MFACA in December 2022 that the emission inventory in Appendix B was incorrect and that it would be amended. The amended emission inventory was posted along with the proposed rule modifications that are subject to the SN. See SN, Attachment 2, Table 1, pages 3-22. At the time of the January 2023 hearing, no one, including the Board, was able to effectively evaluate actual emissions because there was no correct emissions inventory.

A further evaluation of 42 MFACA member chrome plating facilities, including the largest by amp-hours, was made based on known proximities to the nearest sensitive receptors at each of these locations.¹⁹ Once the math is applied to these facilities, none of them are remotely close to the 213 in one million cancer risk asserted in the ISOR, even assuming the default 2007 ATCM emission rate. Despite having an amended emission inventory, the Record has not been corrected to reflect the changes that would result from that information including the dramatic decrease in actual risk.

As stated, 42 facilities (37% of the total universe of 113 facilities at issue) were evaluated by considering the total amp-hours used, the distance to a receptor, the default 2007 ATCM rate and the actual or assumed actual tested emission rate at the facility. When applying the 2007 ATCM default emission rate, the worst-case exposure resulted in a 155 in a million exposure, a value significantly less than 213, but also purely a hypothetical result. However, once actual emissions were determined from source test results, the worst-case exposure level for 39 of 42 facilities was less than one in one million.²⁰ The three remaining facilities would have results of 1.24, 1.93 and 4.54 excess risks per one million at the nearest receptor, respectively, all below the generally accepted triggering value of ten excess risks per one million.²¹ Thus, all evaluated facilities have risk values that comport with California's Air Toxics Hot Spots requirements and SCAQMD standards for toxic air contaminants.

The SN includes the corrected emission inventory but fails to correct the Record on this egregious error. This fact is a critical one for the public and, due to the enormous size of the risk, it has become a primary focal point that not only affects the public but has been broadcast in the media. Because the Record lacks any of the corrected information within it, decision makers are affected by the erroneous information and are without the substantial evidence needed to make an unbiased and impartial decision.

¹⁸ See footnote 11, *supra*.

¹⁹ See Attachment 4 - Facility-Specific Risks and Proximity for Actual Hexavalent Chromium Usage

²⁰ Cf. the EPA IRIS ambient air excess cancer risk from hexavalent chromium of three in one million discussed, *supra*.

²¹ Notably, the facility with the highest amount of amp-hrs and the highest assumed risk, dropped to a risk of 1.24 in one million once actual information was applied. The actual source test data found the tested facility emission rate to be 0.000012 mg/amp-hr (and lower). Thus, a 213 hypothetical excess cancer risk is now a 1.24 actual excess cancer risk, a value which is below existing ambient hexavalent chromium levels!

Attachment 4

Facility-Specific Risks and Proximity from Actual Hexavalent Chromium Usage

**Excess Risks in one million @
different source test emission
factors¹**

			Assume		Actual
Facility Type	Meters to Receptor	Amp-hrs.	0.0015	0.00000029	0.00000029
Anodizing	0	104,168	0.21	0.0000040	0.0000040
Anodizing	0	50,460	0.10	0.0000020	0.0000020
Anodizing	0	484,349	0.97	0.0000187	0.0000187
Anodizing	0	117,689	0.24	0.0000046	0.0000046
Anodizing	18	388,833	0.94	0.0000183	0.0000183
Anodizing	62	23,658	0.21	0.0000040	0.0000040
Anodizing	67	74,681	0.24	0.0000046	0.0000046
Anodizing	111	14,425	0.20	0.0000038	0.0000038
Anodizing	139	288,742	0.29	0.0000057	0.0000057
Anodizing	158	655,289	0.40	0.0000077	0.0000077
Anodizing	198	43,683	0.04	0.0000008	0.0000008
Anodizing	455	163,507	0.20	0.0000040	0.0000040

			Assume		Actual
Facility Type	Meters to Receptor	Amp-hrs.	0.0015		0.000188
Decorative	0	982,191	13.10		0.20
Decorative	0	57,395	0.77		0.01
Decorative	10	29,378	1.26		0.02
Decorative	19	233,010	4.75		0.07
Decorative	61	206,929	2.24		0.03
Decorative	71	937,659	5.09		0.08
Decorative	76	250,952	2.21		0.03
Decorative	95	27,248	1.36		0.02
Decorative	148	3,729,115	9.60		0.15
Decorative	167	1,485,252	4.20		0.06
Decorative	172	108,398	1.47		0.02
Decorative	208	8,423	0.20		0.00
Decorative	273	15,391	0.98		0.01
Decorative	311	4,185	0.53		0.01
Decorative	390	639,660	1.75		0.03

¹ Assumes continuous 24-hour per day exposure over seventy years.

Excess Risks in one million @
different source test emission
factors²

			Assume	Assume	Actual
Facility Type	Meters to Receptor	Amp-hrs.	0.0015	0.000588	0.0000588
Hard	0	57,942,267	115.88	45.43	4.54
Hard	17	1,418,916	2.57	1.01	0.10
Hard	18	6,298,513	10.29	4.03	0.40
Hard	18	5,560,000	9.11	3.57	0.36
Hard	29	10,380,000	15.69	6.15	0.62
Hard	41	116,476,081	155.11	60.80	1.24 ³
Hard	69	78,104,109	49.16	19.27	1.93
Hard	116	10,195,736	4.49	1.76	0.18
Hard	152	12,710,000	4.33	1.70	0.17
Hard	344	3,774,586	0.69	0.27	0.03
Hard	366	4,071,963	0.69	0.27	0.03
Hard	449	203,876	0.21	0.08	0.01
Hard	483	14,752,086	1.36	0.53	0.05

			Assume	Assume	Actual
Facility Type	Meters to Receptor	Amp-hrs.	0.0015	0.000588	0.0000588
Multiple (Hard chrome/Anodizing)	210	107,434,648	25.41	9.96	1.00

² Assumes continuous 24-hour per day exposure over seventy years.

³ Source test data from location reported at 0.000012 mg/amp-hr.

Response 182 et al.:

Portions of these comments are not specifically directed at the changes in the First 15-Day Notice; therefore, CARB is not required to respond. To the extent that portions of these comments are directed at the changes in the First 15-Day Notice, please see Master Responses 1-3, 11, and 12-15.

CARB staff will address the comments regarding the potential cancer risk value of 213 chances/million. Appendix F of the ISOR contains a series of tables that present potential cancer risks from functional and decorative platers. The annual activity in these tables ranges from 10,000 to 120,000,000 amp-hours, and the distance to the nearest receptor varies from 5 meters to 200 meters. As discussed in Master Response 1, based on these two ranges, the potential cancer risks vary from <1 chance/million to 213 chances/million. For decorative platers, Tables F.13(a) and F.13(b) in the HRA show that potential individual resident cancer risks range from less than one chance per million to approximately nine chances per million at the nearest receptor. For small and large functional platers, Tables F.14(a) and F.14(b) show that potential individual resident cancer risks range from less than one chance per million to approximately 213 chances per million at the nearest receptor. The Board was presented with this range of potential cancer risks to inform their decisions, and this information was posted for public review and comment. CARB staff made no changes to the Proposed Amendments based on the received comments.

c) SRIA

The following comments express related concerns: 183 and 195-4.

Comment 183:

The SRIA painted the picture that implementation of the proposed ATCM will provide an annual hex chrome emission reduction benefit of 10.15 pounds annually at a cost of \$688 Million. That works out to \$68 million per pound of hex chrome reduced.

Subsequent publishing of the ISOR in November of 2022 and now the revised emissions inventory in March of 2023 reveal that there are only 0.19 pounds of hex chrome actually emitted annually. So, this is a 53-fold reduction in the benefit for the same cost.

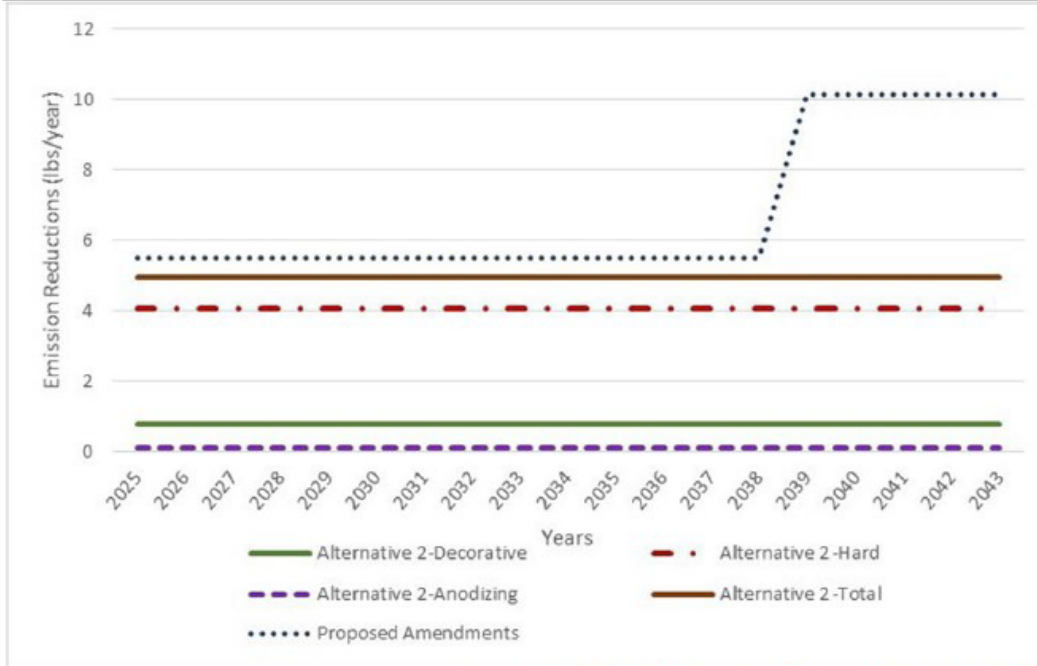
Let's assume for now, that CARB's March 27 emission inventory is correct and that the costs originally assumed in the SRIA have not changed. We can calculate the benefit at 0.19 pounds per year and the cost at \$688 million and determine that the cost of the ATCM is now \$3.621 Billion per pound of hex chrome reduced. Considering all the non-chrome plating sources and emissions which have not been addressed by CARB yet, California is looking at an absolutely crushing economic hit to come in the range of more than \$100 Billion.

How does the Department of Finance feel about this proposal now?

Comment 195-4:

The following graph is based on the estimated emissions of 10 lbs./year, but it hasn't been updated. If any decisions are made based on the SRIA and it has not been updated with correct [or even the new, faulty] emissions estimates then the process is undermined. If the estimated emissions are less, then the \$/lb. of emission reduction changes dramatically.

Figure 6.2 Projected Hexavalent Chromium Emission Reductions under Proposed Amendments and Alternative 2



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The ISOR and SRIA baseline levels of 10.15 pounds per year are the theoretically worst-case possible emissions which could exist without the proposed ATCM. The Board is trying to take credit for the distance in improvements the industry as already made by investing in HEPA controls and underutilizing their permits. Relating the cost per pound associated with the SRIA \$688M per 10.15 pounds provides an efficiency factor \$67.8 million per pound of emission reduction. Relating the \$688 to 0.19, provides an efficiency factor of \$3.62 billion per pound cost of emission reduction.

Response 183 and 195-4:

Please see Master Responses 1-3, 8, 11, 12, and 15. The SRIA presents a point-in-time analysis, and the information in the SRIA is based on the best information that was available at the time it was written. As discussed in Master Response 11, the 0.19 lbs/year value was corrected in the Second 15-Day Notice to 1.05 lbs/year. Notably, none of the values in the emission inventory include fugitive emissions, which are a significant source of concern to communities (see Master Response 12).

Staff disagree with the way the commentor calculated an “efficiency factor” of \$3.62 billion per pound, which included inappropriate assumptions.

Comment 197-4:

The SRIA document evaluates the costs associated with the adoption of the Proposed Amendments as originally prepared in the Notice. The Notice of Public Availability of Modified Text and Availability of Additional Documents and Information on the Proposed Amendments to the Airborne Toxic Control Measure [ATCM] for Chromium Electroplating and Chromic Acid Anodizing Operations (the “Proposed Amendments”) (hereinafter the “Supplemental Notice” or “SN”) provides some update to the costs within its text. See SN, generally at Attachment 2. The SN does not re-evaluate the costs by considering actual

emissions being reduced to 0.19 pounds per year as provided in revised Table VI.1. See SRIA, Table 2.1, section 2.1 at pages-22-23. The SRIA was originally prepared by calculating the removal of all potential (not actual) hexavalent chromium emissions from chrome plating facilities over a twenty-year period assuming an artificial and worst-case default rate established over 16 years ago (2007). These calculations, which apply two hypothetical and unrealistic variables, found a reduction of 132 pounds of hexavalent chromium derived from unrealistic assumptions found in the ISOR. See SRIA, pages 1 and 23, Table 2.3. These values appear to be derived from Table VI.1 (at column 2), the column associated with 2007 ATCM limits.⁵

The SRIA improperly evaluated hypothetical unrealistic information that has never actually existed in practice, applying pure assumptions, not actual, factually determined use and emissions. With this sleight of hand, the otherwise significant revisions for Table VI.1 as a whole might be ignored.

The revised Table VI.1, Column 2 finds little change in the hypothetical assumptions (a 0.01-pound total reduction, reducing the final amount of emissions over twenty years by 0.08 pounds from 132.37 pounds to 132.29 pounds). However, the change to actual emissions is dramatic. For column 4, when calculated as provided in the SRIA, the actual hexavalent chromium emissions over twenty years would result in only a 3.1 pound reduction over these same twenty years. See Attachment 1 (SRIA Table 2.3 (revised) for column 3 and column 4 emissions reduced).⁶

The reason that hypothetical numbers cannot be used (and especially not multiplied together) in the SRIA evaluation becomes quite apparent when comparing a hypothetical 132.3-pound reduction versus an actual 3.1-pound reduction. The scale of difference between 132.3 and 3.1, is a factor of 42.68 times.⁷

The overall SRIA evaluation of emissions is troubling when looking back to the mandate of Health & Safety Code Section 39665(b), which directs the information to consider to be based upon (1) the rate of present emissions (not hypothetical emissions), and (5) the approximate cost of the [Proposed Amendments] as reflected by the amount of emissions (not hypothetical emissions) from the category of sources. Id at (b)(1) and (b)(5). With the introduction to actual emissions reported in the revised Table VI.1, this error in the record should be corrected.

The cost-effectiveness of the Proposed Amendments is part of the evaluation of the SRIA. When applying 132.1 pounds to the total assumed cost of \$585,919,503,⁸ the cost savings is valued at \$4,426,377 per hexavalent chromium pound reduced. See SRIA, Table 6.7. While this numeric value appears high at first blush, it pales to the higher costs per pound once considering actual throughput and actual emissions of 3.1 pounds over twenty years using the data from revised Table VI.1. As applied with the same SRIA formula to column 4 data, the cost-effectiveness increases to \$189,006,291 per hexavalent chromium pound reduced!⁹

The SRIA fails to evaluate the costs and benefits by reflecting on the inherent exposure caused by the existing baseline of hexavalent chromium within California, i.e., 550 pounds of annual emissions. Moreover, the costs and benefits do not reflect on the existence of ambient hexavalent chromium throughout the state.

The SRIA imposes a pre-ordained benefit resulting from the removal of potential emissions that never existed. It couples that inflation with a failure to observe pre-existing conditions

that already expose the average California residents to some amount of hexavalent chromium exceeding the one in one million risk threshold. See General Health Impact, supra.

⁵ Notably, this Column 2 dramatically conflates the actual emissions by taking higher hypothetical default 2007 ATCM limits, then multiplying this artificially high number with potential (not actual) throughput. For comparison, Column 3 applies one actual number (real 2019 throughput) and Column 4 applies real data, i.e., actual 2019 throughput and actual 2019 emissions.

⁶ Column 3, which is inflated by one variable (using the 2007 ATCM default emission rate), would still find total hexavalent chromium emissions saved over twenty years reduced to 35.12 pounds.

⁷ Another way to consider this information is by observing that permitted use vastly exceeds actual use, and that 2007 ATCM regulatory limits are vastly higher than actual emission results 16 years later based on advances in control technology and imposition of more stringent limits at the local (District) level.

⁸ This figure assumes CARB’s cost estimates were correct, but they are more likely substantially underestimated.

⁹ \$585,919,503 / 3.1 pounds.

Attachment 1

SRIA Table 2.3 Corrected to Actual Emissions

Table 2.3 Estimated Annual Hexavalent Chromium Emission Reductions Resulting from the Proposed Amendments from 2024 to 2043 (column 3, Revised Table VI.1)¹

Year	Hexavalent Chromium from Decorative Chrome Plating Operations (lbs/yr)	Hexavalent Chromium from Hard Chrome Plating Operations (lbs/yr)	Hexavalent Chromium from Chromic Acid Anodizing Operations (lbs/yr)
2024	0.0	0.0	0.0
2025	0.21	1.24	.01
2026	0.21	1.24	.01
2027	0.21	1.24	.01
2028 to 2037	0.21	1.24	.01
2038	0.21	2.47	.02
2039 to 2042	0.21	2.47	.02
2043	0.21	2.47	.02
Total	3.99	30.88	0.25

Table 2.3 Estimated Annual Hexavalent Chromium Emission Reductions Resulting from the Proposed Amendments from 2024 to 2043 (column 4, Revised Table VI.1)²

Year	Hexavalent Chromium from Decorative Chrome Plating Operations (lbs/yr)	Hexavalent Chromium from Hard Chrome Plating Operations (lbs/yr)	Hexavalent Chromium from Chromic Acid Anodizing Operations (lbs/yr)
2024	0.0	0.0	0.0
2025	0.093	0.048	0.005
2026	0.093	0.048	0.005
2027	0.093	0.048	0.005
2028 to 2037	0.093	0.048	0.005
2038	0.093	0.096	0.01
2039 to 2042	0.093	0.096	0.01
2043	0.093	0.096	0.01
Total	1.77	1.20	0.13

¹ Actual usage multiplied by assumed 2007 ATCM default Amp-hr emission limits.

² Actual usage multiplied by actual Amp-hr emission limits.

Response 197-4:

Portions of this comment are not specifically directed at the changes in the First 15-Day Notice; therefore, CARB is not required to respond. To the extent that portions of this comment are directed at the changes in the First 15-Day Notice, please see Master Responses 1, 8, and 11.

d) Technology Reviews

Comment 195-6:

Review prior to Ban Date - While we appreciate the additional time for decorative hexavalent chromium plating, a technology review is needed before the ban in 2030 can be implemented. A technology review should consist of a review by knowledgeable participants which would include an assessment of important criteria.

At the January 27 meeting, Board members expressed concerns that decorative hexavalent chromium platers needed more time before the ban. The underlying rationale for the additional time is that trivalent chromium is still not an option for many critical decorative applications, where customer specifications and demands for product performance require the use of hexavalent chromium processes. A 2030 ban is arbitrary, and without providing a viable alternative to the many applications performed with decorative hexavalent chromium plating. Even with the additional time, there is no guarantee that trivalent chromium decorative plating processes will be available for the applications that prompted the extension to 2030.

Accordingly, we urge the Board to modify, at minimum, the proposed modifications to the ATCM to include a requirement for a technology review to be conducted prior to the 2030 ban date to assess the transition to alternatives and determine if more time is needed to phase out decorative hexavalent chromium plating for all applications. Otherwise, the ban will unnecessarily eliminate decorative plating services for many critical supply chains and high paying California jobs for the employees who work there.

Comment 196-2:

Technology Review Prior to the 2030 Proposed Ban.

The regulated community, and its employees/families, rely on rulemaking agencies to make thorough and informed decisions. Any loss in the livelihood of our small businesses and workforce is not acceptable if the agency does not properly review—and if necessary alter—its decisions.

We urge the Board to modify, at minimum, the proposed modifications to the ATCM to include a requirement for a technology review to be conducted prior to the 2030 ban date to assess the transition to alternatives and determine if more time is needed to phase out decorative hexavalent chromium plating for all applications.

Response 195-6 and 196-2:

These comments are not specifically directed at the changes in the First 15-Day Notice; therefore, CARB is not required to respond. To the extent that any portion of these comments is considered to be within the scope of the First 15-Day Notice, please see Master Responses 4-6.

e) CEQA

Comment 197-6:

CEQA requires that CARB have prepared a document to determine whether a project is a discretionary action. See generally, Public Resources Code Sections 21000 et seq.; Title 14 CCR Sections 15000 et seq (the "CEQA Guidelines"). The statute and the CEQA Guidelines provide a framework for agencies to tier from a "program" EIR prepared for a program, plan, policy, or ordinance (PRC Sections 21093, 21094; CEQA Guidelines Sections 15168, 15152). The program EIR will cover "general matters and environmental effects" for the overarching program, plan, policy, or ordinance, and the agency will prepare "narrower or site-specific [EIRs] which incorporate by reference the discussion" in the program EIR (PRC Section 21068.5). The document may also take the form of an Environmental Assessment ("EA"), as it did in this Record.

The data reported in revised Table VI.1. identifies the latest compiled information of actual annual emissions of hexavalent chromium from chrome plating facilities equaling 0.19 pounds, which when converted to grams (453.6 grams per pound) amounts to 86.2 grams for the entire state. As discussed herein, *infra*, the total universe of hexavalent chromium emissions in California is 550 pounds annually (i.e., 249,480 grams).

The EA describes the increase of transportation resulting from the ban of hexavalent chromium use by chrome plating facilities.¹³ There is a general discussion about diesel particulate material ("DPM") emissions and a conclusion that this impact is significant and cannot be mitigated for construction purposes. CITE

It is well known and recognized that DPM, along with brake dust and tire wear from trucks used in intrastate and interstate commerce all contribute hexavalent chromium into the California environment. A prior document produced for CARB staff for consideration in these Proposed Amendments identified the amount of hexavalent chromium emissions that would be attributed to a single roundtrip in a diesel-equipped truck (at 7.5 miles per gallon) to the nearest out-of-state location (from Los Angeles), Mojave Valley, AZ (260 total miles one way).¹⁴ That total is 3.14 grams of hexavalent chromium emitted for the one roundtrip. While a single trip is not consequential, many of the same roundtrips trips (only about 28 or more) would result in hexavalent chromium emissions increasing in the state as a result of the proposed action! For purposes of this simplified assessment, known sources of DPM criteria for toxic air contaminants were identified from public agency records at the SCAQMD.

The following calculation provides the number of miles necessary for the hexavalent chromium emissions annually from trucking mobile sources only to exceed the actual amount emitted by all chrome plating facilities in the state:

$$86,200 \text{ mg} * 0.006048 \text{ mg hexavalent chromium /mile}^{15} = 14,253 \text{ miles}$$

If just one excess trip is made daily due to the Proposed Amendments, the amount of annual hexavalent chromium emissions increases in California as follows:

$$(3,140 \text{ mg/trip} \times 365 \text{ days}) - 86,200 \text{ mg (all chrome plating activities)} =$$

$$1,146,100 \text{ mg} - 86,200 \text{ mg} = 1,059,900 \text{ mg} / 1,000 \text{ mg/g} / 453.6 \text{ g/lb} =$$

2.337 pounds increase of hexavalent chromium in California

The number of miles identified as needing to occur (14,253 miles) is dramatically lower than what would otherwise transpire with the loss of hexavalent chromium plated parts in California, which, as the CEQA document acknowledges, represents an issue that will increase transportation. EA at page 10.¹⁶ The increase in mileage will also result in increases statewide of emissions for many other toxic air contaminants including, benzene, formaldehyde, arsenic, cadmium and nickel, among others. None of the increases of these toxic air contaminants nor their cumulative detriment to the state was considered in the EA.

The EA is based entirely is upon the following assumption: “the Proposed Amendments are meant to reduce toxic air emissions associated with hexavalent chromium.” EA at page 102. If the newly described actual emissions of 0.19 pounds per year are equitably compared with the increases in transportation use (and their concurrent and substantial increase in hexavalent chromium emissions) that will directly flow from the Proposed Amendments, then the EA evaluation is wrong at its core.

The CEQA document does not analyze the direct increase of hexavalent chromium emissions across the state. It merely notes air quality impacts for construction, but not for transport. For Air Quality, the EA concludes: “Therefore, the Proposed Amendments would result in a cumulatively beneficial contribution to reducing air toxic emissions during operations.” EA at page 90.

The EA fails to discuss the ambient hexavalent chromium conditions throughout the state and the relative health exposure resulting from these ambient conditions. See discussion in this letter, *infra*. It does not account for the increase in hexavalent chromium emissions resulting from the increased transportation that will necessarily result from the increased truck and rail traffic. It also does not account for increases in fuel, brake and tire emissions at California’s ports that may result from the increased importation of hexavalent chromium parts.¹⁷

The cumulative detrimental contribution of hexavalent chromium that will result, if the Proposed Amendments are adopted, could be avoided by an alternative that was not considered in the EA. That alternative would allow the continued operation of chrome plating facilities in California, which would provide a cumulatively beneficial contribution to statewide hexavalent chromium emissions by reducing the amount of truck and rail traffic. The failure to properly consider such a reasonable and obvious alternative is a further defect in the EA.

¹³ The EA suggests that there is an as yet undetermined amount of transportation occurring presently as a result of hexavalent chromium plating activities. EA at page 19. While there may be a minimal amount, the principal reason for the concentration of these chrome plating facilities in California is the close distance to their customers in various manufacturing industries.

¹⁴ Attachment 3 - Increased Hexavalent Chromium Emissions from Mobile Sources. The information is based upon DPM only, not brake and tire wear. Supporting agency weblinks are found within Attachment 3.

¹⁵ See Attachment 3.

¹⁶ The EA also references the use of trains trips. For simplicity purposes, the comment herein has focused on truck trips; however, train trips will also result in the additional emission of hexavalent chromium, which was not evaluated in the EA.

¹⁷ As the Proposed Amendments note, 91% of the hexavalent chromium emissions in the state are from mobile sources that would include interstate transportation, which is outside the state’s ability to directly regulate. As discussed herein, emissions from these same and (significantly greater) hexavalent chromium mobile sources will increase further with the ban of chrome plating facilities.

Attachment 2

Increased Hexavalent Chromium Emissions from Mobile Sources¹

Los Angeles, CA to Mojave Valley, AZ		260	miles		(each direction)		
Fuel economy Heavy duty Diesel Trucks		7.5	mpg				
http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/combustion-emission-factors-2021.pdf Toxic Emission Factors from Stationary and Portable Internal Combustion Engines (ICE), Turbines and Micro Turbines Diesel / Distillate Oil (lb/1000 gallons)							
		All Sizes					
Toxic Compound	CAS No.	lbs./1,000 gals	lbs./gal	lbs./mile	mg/mile	mg/trip	mg/roundtrip
Benzene	71432	0.1863	0.0001863	0.00002484	11.26723	2,929.48	5,859
1,3-Butadiene	106990	0.2174	0.0002174	2.89867E-05	13.14813	3,418.51	6,837
Cadmium	7440439	0.0015	0.0000015	0.0000002	0.090718	23.59	47
Formaldehyde	50000	1.7261	0.0017261	0.000230147	104.3928	27,142.12	54,284
Hexavalent chromium	18540299	0.0001	0.0000001	1.33333E-08	0.00605	1.57	3.14
Arsenic	7440382	0.0016	0.0000016	2.13333E-07	0.096766	25.16	50
Lead	7439921	0.0083	0.0000083	1.10667E-06	0.501976	130.51	261
Nickel	7440020	0.0039	0.0000039	0.00000052	0.235868	61.33	123
PAHs(polycyclic aromatic hydrocarbons)	1151	0.0559	0.0000559	7.45333E-06	3.380775	879.00	1,758
Diesel exhaust particulate	9901	33.5	0.0335	0.004466667	2026.046	526,771.94	1,053,544
Ammonia	7664417	2.9	0.0029	0.000386667	175.389	45,601.15	91,202
Organic Gases		37.5	0.0375	0.005	2267.962	589,670.08	1,179,340
NOx		469	0.469	0.062533333	28364.64	7,374,807.15	14,749,614
Sox		0.21	0.00021	0.0000028	12.70059	3,302.15	6,604
CO		102	0.102	0.0136	6168.856	1,603,902.62	3,207,805
PM		33.5	0.0335	0.004466667	2026.046	526,771.94	1,053,544

¹ Emission metric based upon readily available public data. Assumes estimates for truck use only.

https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and						
Diesel, Heavy Duty Truck 2020		g/mile		mg/mile	mg/trip	mg/roundtrip
Total HC		0.269		269	69,940	139,880
Exhaust CO		2		2000	520,000	1,040,000
Exhaust NOx		4.169		4169	1,083,940	2,167,880
Exhaust PM2.5		0.106		106	27,560	55,120
Brakewear PM2.5		0.009		9	2,340	4,680
Tirewear PM2.5		0.004		4	1,040	2,080

Response 197-6:

Please see the response to Comment 197-3 in the Response to Comments on the Draft EA. As discussed in the Response to Comments to the Draft EA, CARB staff disagrees with the commenter's calculations comparing emissions of hexavalent chromium from diesel truck trips to statewide emissions of hexavalent chromium from chrome plating operations. The comment incorrectly calculated these emissions by using incorrect units, the incorrect emission factor, and an incorrect equation. Further, the estimated emission values used in the comment letter have been updated by staff via the Second 15-Day Notice. Due to these errors, the commenter's calculated diesel truck miles traveled that equals statewide hexavalent chromium emissions from chrome plating operations are off by three orders of magnitude.

Please see Master Response 11, which includes a discussion regarding changes made to the 0.19 lb/year value in the First 15-Day Notice, which was corrected to 1.05 lbs/year in the

Second 15-Day Notice. Please also see Master Response 1, 9, and 12. CARB staff made no changes to the Proposed Amendments based on the received comments.

f) Suggestions for Amendment Alternatives

Comment 197-8:

As stated in ISOR at page 222: Government Code section 11346.2, subdivision (b)(4) requires CARB to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. This section discusses alternatives evaluated and provides reasons why these alternatives were not included in the proposal. As explained below, no alternative proposed was found to be less burdensome and equally effective in achieving the purposes of the regulation in a manner than ensures full compliance with the authorizing law. (Emphasis added).

As discussed previously, the purpose of the regulation is “to reduce the emissions to the lowest level achievable through application of available control technology or a more effective control method, unless the state board or a district board determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health.” Emphasis added. The latter portion of the section appears to be the one CARB is seeking to apply since the Record states the zero threshold is necessary due to the endangerment of public health. This conclusion flies in the face of the information provided in revised Table VI.1 concerning the total of actual hexavalent emissions being only 0.19 pounds per year and the known (but otherwise unanalyzed in the Record) lessened risk associated with this lower amount. The public endangerment finding requires and must be based upon an assessment of risk, particularly if the toxic air contaminant is designated as “no determination versus “no threshold”. That risk assessment appears in this letter and finds that public endangerment does not exist, and that all the facilities would meet existing requirements for risk in their respective local air districts. The SN does not contain any form of updated risk assessment necessary to support the public endangerment finding.

If CARB has not updated its risk assessment, the statute provides an alternative solution. The purpose of the regulation can be met by either the use of available control technology or a more effective control method. Because this statutory choice is discretionary, CARB is not mandated to institute a ban and will still be able to achieve the purposes of the regulation in a manner than ensures full compliance with the authorizing law. CARB may decide to apply available control technology, especially in light of the new emission inventory information and the significantly reduced actual emissions reported in Table VI.1. Thus, the alternatives can be viewed both as less burdensome and equally effective with the purposes of the authorizing law.

Government Code Section 11346.2(b)(4) provides the requirements for alternatives:

(4)(A) A description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. Reasonable alternatives to be considered include, but are not limited to, alternatives that are proposed as less burdensome and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing statute or other law being implemented or made specific by the proposed regulation. In the case of a regulation that would mandate the use of specific technologies or

equipment or prescribe specific actions or procedures, the imposition of performance standards shall be considered as an alternative.

(B) A description of reasonable alternatives to the regulation that would lessen any adverse impact on small business and the agency's reasons for rejecting those alternatives.

(C) Notwithstanding subparagraph (A) or (B), an agency is not required to artificially construct alternatives or describe unreasonable alternatives.

The ISOR takes pains to identify multiple times concerns about proximity, sensitive receptors and disadvantaged communities. Through these continuous assertions, it indirectly acknowledges: (1) there is a distance at which exposure is effectively "zero", and (2) that some percentage less than 100% is not near a sensitive receptor or in a disadvantaged community. See ISOR, Figure V.1 at page 174 [zero at 500 meters]; and page 3 [9% within 300 meters of schools (i.e., 91% are not) and 14% within AB 617 communities (i.e., 86% are not)].

An alternative based upon proximity should have been automatic, and cannot be considered an artificially constructed alternative, or otherwise unreasonable. Such a reasonable alternative would have lessened any adverse impact on small businesses. The evaluation could have identified a sufficient distance, appropriate technology and allowed for no future prohibition on new facilities if the requirements were met.

Instead, the ISOR discussed three alternatives: (1) Short Phase Out and (2) No Phase Out and (3) Extended Phase Out. See ISOR, Section X (page 222 et al). These alternatives were based upon the original assumptions found in the ISOR and not based upon the updated emission inventory and lower actual emissions as found in revised Table VI.1. This new information requires these alternatives be re-evaluated; however, no discussion on revised alternatives exists in the SN, and the Record presently contains the original analysis in the ISOR only, which lacks the new information. As discussed above, the reduced actual risk overall, coupled with the existence of facilities that are not near sensitive receptors or in disadvantaged communities, strongly suggests that existing alternatives must be re-evaluated. Because the emissions values have dramatically decreased under Table VI.1., the subsequent evaluation of risk derived from that information finds that existing risk based upon proximity is likely to be acceptable under present statutory guidelines. Nevertheless, an alternative evaluation should be reconsidered, particularly for the No Phase Out alternative, in light of additional control technologies that could further reduce risk including the zero-emission alternative of Permanent Total Enclosures.

An additional alternative based solely on risk and proximity should also be considered. Without this new emissions inventory, such a consideration would not have been possible; however, given the new information and the apparent need to consider risk, rather than a zero threshold, based upon a proper reading of the statutes, the failure to include and consider such an alternative represents an abuse of discretion.²²

²² One must carefully consider that the Proposed Amendments are solely for chrome plating facilities and do not affect mobile sources (which will increase if the Proposed Amendments are approved), nor do they alter existing stationary sources outside the universe of chrome plating facilities that may have much higher risk due to their emissions and proximity.

Response 197-8:

Please see the response to Comment 197-3 in the Response to Comments on the Draft EA. Also, please see Master Response 11 for a discussion regarding changes made to the 0.19 lb/year value in the First 15-Day Notice, which was corrected to 1.05 lbs/year in the Second 15-Day Notice. Finally, see Master Response 14 for an explanation of why CARB is implementing a statewide regulation and not including the proposed exceptions to the phase out for facilities that are not located in disadvantaged communities or near sensitive receptor. CARB staff made no changes to the Proposed Amendments based on the received comments.

g) Surface Tension of Water

Comment 194:

The listed surface tension of water at 25 degrees celcius (72.75 dynes/cm) in now appendix 7 is actually the surface tension of water at 20 degrees celcius. The correct surface tension of water at 25 degrees celcius is 71.99 dynes/cm as noted in the International Tables of the Surface Tension of Water at <https://srd.nist.gov/JPCRD/jpcrd231.pdf> and attached. If facilities use the surface tension calculation as presented in the ATCM, their results will be skewed higher than reality, resulting in greater emissions of hex chrome. Thank you.

Response 194:

This comment is not specifically directed at the changes in the First 15-Day Notice; therefore, CARB is not required to respond. Nevertheless, CARB understands the apparent discrepancy in the value for surface tension. 72.75 dynes/cm was the intended value and has been used since the 2007 ATCM amendments. This value is consistent with the surface tension value used in Rule 1469. CARB staff made no changes to the Proposed Amendments based on the received comments.

2. Irrelevant Comments

181, 184, 186-2, 188, 189, 190, 191-3, 192, 193, 195-3, 195-5, 195-7, 196-1, 196-3, 196-4, 196-5, 196-6, 197-3, 197-5, 197-10, 197-11, 198, and 199.

Response 181 et al.:

CARB staff made no changes to the Proposed Amendments based on the received comments. The comments are outside the scope of this rulemaking, irrelevant, or not specifically directed at changes made in the First 15-Day Notice; therefore, CARB is not required to respond. CARB staff made no changes to the Proposed Amendments based on these comments.

D. Comments Received during the Second 15-Day Comment Period

1. Comments in Opposition of the Second 15-Day Notice Changes

a) Table 1 of Attachment 2

The following comments expressed related concerns: 201 and 204.

Comment 201:

The revised data posted on 4-26-23 refer to an average source test value for hard chrome platers of 5.88E-04. The footnote 3 in table 1 points the reader to the source of that number which is Table 2. Table 2 contains a line labeled Hard with Add-On that shows seven values which do computationally average 5.88E-04. How did CARB select those seven values as representative samples for the hard chrome population? I am particularly curious how the values 0.001 and 0.0013 were selected as they do not appear to be consistent with values that would be the result of HEPA Control System source tests. If they were not from HEPA control systems, can CARB why they have chosen to create an average from a sample in which 28% of hard chrome platers do not have HEPA controls. Is that representational. Why didn't CARB simply use actual source test values from all the facilities? Does CARB have source test data from all the facilities for which this rule is being proposed? If not, why not? Has CARB asked the air districts for the data necessary for this rule? Did the air districts comply with CARB's requests? Has CARB chosen to omit some source test data which it has in its' possession from the average? If CARB has omitted data from any particular facility from the average, why? Since a key element of this rule making is the analysis of BACT, how did CARB reach a conclusion about BACT efficiency? Does CARB understand the efficiency of HEPA's? Clearly they have had some difficulty in applying and communicating the efficiency in this proposed rule. CARB staff proposes a ban, purportedly because emissions are too high even with BACT, so they should have done some studying of BACT efficiency. Observation of the emissions inventory and the changes to the emissions data to this point suggest that CARB staff did not understand BACT efficiency to this point in the process. What is the rationale for a ban in light of the HEPA efficiencies of each of the HEPA controlled facilities in California? I submitted my HEPA source test result to CARB at CARB's request prior to the rule proposal. CARB has not used my source test result to show the efficiency of my facility. Rather, it has used the much higher "average" that it has arbitrarily computed. CARB did not use my source test data to compute the average. My data has been ignored. My data would have reduced the average. My system was source tested in 2019. What was the time period of the source tests CARB used in the average they show here? My system tested at 0.000023. The average that CARB has used and applied to me and all the other hard chrome facilities in this inventory is 25 TIMES HIGHER than my actual test. Obviously, inclusion of my data would have affected that average. So, what was the logic that CARB used to exclude my data? Did the logic used have anything to do with CARB's objectives for this rule making?

Comment 204:

I want to edit my earlier comment in this 15-2 comment period to make clear that I am asking a question which I expect CARB to answer. In my haste, I omitted some question marks and a key word.

So, when I said this...

"If they were not from HEPA control systems, can CARB why they have chosen to create an average from a sample in which 28% of hard chrome platers do not have HEPA controls. Is that representational."

I meant this...

"If they were not from HEPA control systems, can CARB explain why they have chosen to create an average from a sample in which 28% of hard chrome platers do not have HEPA controls? Is that representational? Please explain and show your work."

Response 201 and 204:

Please see Master Response 11, which explains that CARB staff revised the emissions inventory in the First 15-Day Notice to correct the errors identified in this comment via the Second 15-Day Notice. The commentor asked, "How did CARB select those seven values as representative samples for the hard chrome population?" As discussed in Master Response 11, beginning with the first public workshop, held in September of 2020, CARB staff have been repeatedly asking all stakeholders, including members of industry, to provide data that would help in the development of the Proposed Amendments. This included information about actual throughput and source test data. To date, staff have not received any verifiable source test data from members of industry. Staff has received purported source test results from specific facility owners, but that information was summary in nature and when staff requested the source test reports that would allow staff to verify the values, those reports were not provided. CARB staff also requested source test data from the Districts. In response to that request, CARB staff received verifiable source test data from the Districts for 14 facilities. Since that was the data that was available at the time of our analysis, that is what was used.

The commentor also stated, "CARB has not used my source test result to show the efficiency of my facility. Rather, it has used the much higher "average" that it has arbitrarily computed. CARB did not use my source test data to compute the average. My data has been ignored. My data would have reduced the average. My system was source tested in 2019." The commentor did submit a document that summarized a number of source test runs from 2009 and 2019. However, this data was presented in a one-page summary created by the commentor. The commentor did not provide the source test reports from the source testing companies that conducted the tests, as requested. As such, CARB staff could not confirm the validity of this data. For that reason, the unsubstantiated data was not used. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 203:

For the record - I submitted source test information for Aviation Repair Solutions, Inc. to Eugene Rubin on November 11, 2021 via email. The data is not shown on either Table 1 next to my facility (or any other) and it is not shown on Table 2.

Response 203:

The commentor did submit a document that summarized a number of source test runs from 2009 and 2019. However, this data was presented in a one-page summary created by the commentor. The commentor did not provide the source test reports from the source testing companies that conducted the tests. As such, CARB staff could not confirm the validity of this data. For that reason, the unsubstantiated data was not used. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 211-2:

The Second Supplemental Notice appears to suggest that a single mathematical error is the only thing that was altered and therefore the remainder of the information for which it is a part is not subject to comment. While a single entry was changed, the entire Table 1 has

been resubmitted and recalculated, which requires the entire Table 1 to be evaluated. That evaluation demonstrates a failure to properly review the underlying information has occurred due to improper application and faulty consideration.

We believe the new information in Table 1 must be put into context. In my April Letter, effort was made to determine the universe of hexavalent chromium emissions within California by applying information from the ISOR. The result of that effort found 550 pounds of hexavalent chromium are emitted annually within California. Based on that understanding, the new information from the SSN would find that actual emissions from chrome plating facilities now represents the following amount of that universe:

$1.05 \text{ pounds per year} / 550 \text{ pounds per year} = 0.00191 \text{ [.19\% or } \sim 1/500]^3$

The entire Table 1 has been re-issued as part of the SSN; however, the one mathematically miscalculated entry results in actual hexavalent chromium emissions being calculated as a total of 1.05 pounds per year. The FSN calculated these same emissions as totaling 0.19 pounds per year. The ISOR Inventory calculated these same emissions as totaling 2.2 pounds per year and the text of the ISOR is based upon the ISOR Inventory.

This rulemaking has now produced three different numbers (and tables) estimating actual hexavalent chromium emissions. Why were there ongoing changes and mistakes?

The simple answer is that CARB Staff had to continually consider and make guesses and assumptions as to what numbers would be applied (actual, potential, estimated, consistent inconsistent), then prepare columns of data using different sets of information to “create” a common denominator for the column based on those guesses and assumptions. These differences are not spelled out in Table 1. Their initial guessing process resulted in the ISOR Inventory, from which the entire ISOR, SRIA and Draft EA were prepared. None of this underlying information, or how it was applied, was made available to MFACA or the public, and as discussed further, the mistakes continue to exist in the Record, including the SSN. This purposeful limiting of data, and the process, prevents the decisionmakers and the public from any meaningful ability to determine its accuracy and the conclusions in the Record reached from it.

The second iteration of guesswork became the First Revised Inventory, which was again a process performed by CARB Staff using their guesswork and assumptions. Despite the significant revisions to the table, the ISOR, SRIA and Draft EA were not fundamentally changed. None of this underlying information was made available to MFACA or the public.

The third and latest iteration became the Second Revised Inventory, which did not alter the underlying guesswork and assumptions, but re-did the calculations and corrected a significant error when a new table was created. Despite the revisions, the ISOR, SRIA and Draft EA were not fundamentally changed. None of this underlying information was made available to MFACA or the public.

As my April Letter explains, all three versions of the inventory continue to dramatically over-estimate actual emissions. Source test data from over 1/3 of the listed facilities was compiled independently and without the use of CARB’s guesswork and assumptions. This information is readily available, as is the basis for the results. Its findings on the actual emissions (and risk) show clearly that these parameters have been over-estimated throughout by CARB Staff. See April Letter, Attachment 4.

If we look at the Record and view the revised Table 1, prepared with guesswork and assumptions, contradicting two previously issued tables, leaving the original ISOR intact and unrevised, it does not appear that a decisionmaker would be able to reach a fair and unbiased decision that is not otherwise arbitrary.

Neither the FSN or the SSN attempts to correct the text of the ISOR, which is notable since the tables they revised reduced the actual hexavalent chromium emissions originally analyzed by 11.6 times and 2.1 times, respectively! The ISOR text remains basically unchanged. The SRIA remains unchanged. The Draft EA remains unchanged. How can these documents, which purport to be developed to evaluate the banning of hexavalent chromium at chrome plating facilities, be unchanged if the actual emissions have dropped so dramatically?

Perhaps the most egregious issues lie within the need to correct an error, revise numbers, and re-issue a new table in the SSN. As stated in my April Letter, the MFACA has made multiple requests to obtain the underlying data CARB Staff is using to prepare these estimates. To date, this information has not been provided. See April Letter, Attachment 3. The public should be able to understand not only how these numbers were developed, especially when the numbers are incorrect, but what assumptions were made to place numbers from different data sources into a single common column. The reason the information needs to be made available is that the MFACA is aware that assumptions used to derive estimates are incorrect. We note some examples to show how the information remains suspicious at best and, more likely, just wrong.

First, in Table 1, the third column lists "2019 Facility Reported Throughput (amp-hrs) (Reported)." The total reported amp-hours for all decorative chrome platers in 2019 is 55,684,352 for 51 facilities. One facility's reported emissions total 41,328,000 amp-hrs, or 74.2% of all decorative chrome plating facility emissions. Table 1, page 12, top entry⁵. The other 50 facilities total 25.8% of those emissions. It is impossible to determine whether information on this single facility is accurate, but since it represents such a large share, its actual use would be far more relevant. Accuracy in this one instance is necessary; otherwise, the assumed use of a single facility will entirely skew decorative chrome results for the other 98% of facilities. Perhaps a more accurate approach would have been to remove a single outlier facility from the evaluation since it is unrepresentative of 98% of the decorative chrome plating facilities evaluated.

Second, in Table 1, chromic acid anodizers are evaluated based upon a single emission rate. See Table 1; Column "Average Source Tested Emission Rate (mg/amp-hr)(Reported)". The information is disturbing. A single source test is assumed (by CARB Staff) to be the result for all chromic acid anodizers. The column claims to be an "Average"; however, it is impossible to "average" with a single data point (i.e., value) as the population. A mathematical average is supposed to consider a sum of a group of values. Other information, which could be lower (or higher) is necessary for this information to be relevant and appropriate for Table 1. The data should be excluded, but to do so would interfere with the need to make the table "whole" with information on every category of chrome plating facility. This example shows a bias and affects a fair and impartial evaluation.

Looking at this same information in another way might cause a different but also troubling interpretation. If the tested rate for chromic acid anodizers was accepted, then its total universe of annual hexavalent chromium emissions would be a mere 127 micrograms!⁶ That insignificant amount of emissions begs the question of asking why chromic acid anodizers need to be banned at all since their risk would also not be significant, even at short distances.

The lumping of a ban for chromic acid anodizing with the other chrome plating facilities appears to be a means to remove a source that on its face does not deserve removal.

A third example is the use of facilities that are no longer in operation. We are aware that at four listed facilities are no longer in business, yet the total numbers in this Table 1 are being used as the factual basis of the entire Record, including the SRIA and the EA. One specific example (page 18, final entry) identifies a facility with 567,500,000 amp-hrs. of potential annual throughput, and 14,288,488 amp-hrs. of actual throughput. The entry is no longer in business; however, its large values still serve as a foundational piece of the Proposed Amendments.⁷

A fourth example considers the single facility located in the Feather River AQMD. See Table 1, page 7. Direct information obtained from that operator indicated that its agency reported throughput in 2019 was 1,614 amp.-hrs, not the maximum allowed as reported, 20,000 amp-hrs.⁸ This mistake could be found with effort from the public because the facility was identifiable. This error raises a more ominous concern that many more mistakes, which cannot be readily verified, are present in Table 1.

A fifth example of an issue with Table 1 is the entry under the column, "Permitted Annual Throughput (amp-hrs)(Reported)" for an entry of a decorative chrome plating facility listing of 89,856,000. See SSN, Table 1 at page 9. The MFACA was able to glean from the information what facility was identified and confirmed that its permit has been reduced to only 10,000,000 amp-hrs. as of 2017! If any analysis has been performed and reported in the Record (whether it be in the ISOR, the SRIA or the Draft EA) applying permitted (i.e., potential) throughput, this single example alone demonstrates that Table 1's inaccuracies and publicly unavailable data taint the entire Record's conclusions.

³ Looked at another way, the newly reported data from the SSN identifies that actual hexavalent chromium emissions from chrome plating facilities represents 1.9% (~ 1/50) of the total of all for non-mobile sources.

⁵ The permitted throughput is being used at 100%, which is more than highly suspect. Due to the extraordinary percentage of all decorative chrome plating facility emissions represented by this single facility, at minimum, additional follow-up with the facility would be warranted.

⁶ 127 micrograms are the equivalent of 0.000127 grams or 0.00000028 pounds. Put another way, the amount represents 5.09×10^{-10} of the total hexavalent chromium emissions of 550 pounds in California.

⁷ The removal of the four facilities known to have closed represents a 1/3 of a pound removed annually and several pounds when multiplied through 2043. These reductions in potential emissions would directly affect the SRIA analysis, which includes these already closed facilities.

⁸ This default value (which is erroneous) was also used several other times in the Table, including for the maximum valued decorative chrome operations. See footnote 5, above.

Response 211-2:

Please see Master Response 11. On January 20, 2022, Workgroup #6 published a preliminary cost document that listed all cost assumptions that would be used to draft the SRIA and requested industry to review it and provide any data that would impact the SRIA and calculations presented therein. CARB staff received no comments during that period. Since that time, CARB staff have repeatedly asked industry for additional information. No substantiated cost information was provided by industry to CARB that it could verify for use in the SRIA.

Please also see Master Response 13. Beginning with the first public working group meeting, held in September of 2020, CARB staff have been asking all stakeholders, including members of industry, to provide data that would help in the development of the Proposed Amendments. This included information about actual throughput and source test data from

all sources that had such data. To date, staff have not received any verifiable sources test data from members of industry. Staff has received purported source test results from specific facility owners, but that information was summary in nature and when staff requested the actual source test reports that would allow staff to verify the values, those reports were not provided. CARB staff also requested source test data from the Districts. In response to that request, CARB staff received verifiable source test data from the Districts for 14 facilities. Since that was the data that was available at the time of our analysis, that is what was used.

The commentor states that "As my April Letter explains, all three versions of the inventory continue to dramatically over-estimate actual emissions. Source test data from over 1/3 of the listed facilities was compiled independently and without the use of CARB's guesswork and assumptions." The letter referenced in this comment was submitted in response to the First 15-Day Notice package, which was published almost three years after CARB staff first requested that members of industry provide source test data. The source test data referred to in this quote has not been submitted to CARB staff.

Please see Master Response 11 for a response to claims that the emission inventory overestimates emissions. As discussed in Master Response 12, the emission inventory does not include fugitive emissions. Members of CARB's Board were notified of all revisions to the table in question through the First 15-Day and Second 15-Day Notices and were provided the information needed to make a fully informed decision. The ISOR and the First 15-Day Notice and Second 15-Day Notice explain how the emission inventory was created. CARB staff have provided all interested parties with ample opportunities to provide data that they felt should have been included (see Master Response 13). To date, no such data was provided.

In response to the comments regarding the emission inventory value for the chromic acid anodizing facility discussed above, please see Master Response 12 for a discussion about emissions detected at the Anaplex chromic acid anodizing facility impacting the community of Paramount. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 214:

Consider the marginal benefit to the public of including the future-dated 2039 ban in the rule. Especially consider that the ban is subject to "technology reviews" which will require CARB staff and industry to come to agreement about factual truths. The ban is 15 years away. There is no imminent benefit, only the cost of industry leaving the state and costing jobs in the communities the board believes they are protecting. CARB staff and industry do not agree today that the emissions inventory presented by CARB is factual. The source test average for hard chrome platers, in reality, is not the 0.000588 mg per amp-hour that CARB has presented. This is a fact that the board can verify prior to a vote. The board should insist that CARB staff provide them the source test data for all facilities for verification. The board has a duty to base decisions on facts. If decisions are not based on verifiable truth, of what value is a technology review? It serves no purpose except to appear to mitigate the impact of a ban which has a political motivation rather than a factual motivation. A ban does not spur investment by small plating firms to invent the replacement for hexavalent chrome. Each board member must decide where her moral axis is with respect to truth. Choose truth. Why is there a need for CARB to present untruthful and misleading data to the public in order to enact this rule? Are you a part of it? Why are you on the CARB board? Are you a tool of a political patron or an independent thinker?

Response 214:

Portions of these comments are outside the scope of the Second 15-Day Notice changes; therefore, CARB is not required to respond. To the extent that portions of these comments may be in the scope of the Second 15-Day Notice, they are responded to in Master Responses 1, 11, and 13. Throughout the rulemaking process, beginning prior to the first public workshop, CARB staff repeatedly asked members of industry to provide any and all data that would help in the development of the regulatory requirements. This includes providing source test data. Industry was not forthcoming in providing source test data that could be verified. CARB staff also requested source test data from the Districts. In response to that request, CARB staff received verifiable source test data from the Districts for 14 facilities. Since that was the data that was available at the time of our analysis, that is what was used.

Comment 215:

As a small business owner, I am appalled that your department did not reassess their recommendations after discovering that their initial assessment of the emissions data was flawed over a factor of a misplaced decimal point in their recommendations of banning chrome plating in California – an essential industry serving the medical, mining, defense, and aerospace industries.

Even with the correction of the mathematical error in decimal placement, the resulting emissions data is an over representation of the factual emissions data of chromium emissions of chrome plating in California.

Based on actual emissions data, the removal of all hexavalent chromium emissions from the plating industry would do little, if anything, to reduce the risk. The revised emissions data represents less than 1% of total hexavalent chromium emissions in California---less than one (1) pound per year.

Without correct information, the conclusion drawn by the Board will be based on flawed assumptions. I recommend that the proposed modifications to the ATCM should be revised to include a requirement for a technology review to be conducted prior to the 2030 ban date to assess the transition to alternative technology and determine if more time is needed to phase out functional chromium plating for all applications.

I strongly recommend that the Board reconsider its decision to ban hexavalent chromium plating and instead implement an emissions-based rule to ensure that emissions continue to be reduced to protect human health and the environment. Regulation, not elimination, is what we need.

Response 215:

Please see Master Responses 2, 5, and 11. CARB staff made no changes to the Proposed Amendments based on the received comments.

b) CEQA

The following comments expressed related concerns: 202, 211-3, and 213-2.

Comment 202:

In the Environmental Analysis section of the documents released last night, CARB staff states, DIRECT QUOTE "Since these values were not used in the evaluation of environmental impacts in the Draft EA, staff has determined that these changes would not require new or modified compliance responses and would not result in any new reasonably foreseeable significant environmental impacts or substantially increase the severity of an already identified environmental impact in the Draft EA."

Wow, we are talking about CARB's estimate of ACTUAL emission levels. Not baseline emission levels, not permitted emission levels, we are talking about CARB's estimate of ACTUAL emission levels so keep that in mind and re-read the quote above.

CARB is saying that they don't need to change the environmental analysis due to a change in ACTUAL emissions "since these values were not used in the evaluation of environmental impacts in the Draft EA." in the first place!

Did you know that the State can ignore actual current environmental conditions when preparing an Environmental Analysis? I didn't. But CARB admits here that they paid no attention to ACTUAL emissions when they prepared the Draft Environmental Analysis so they don't have to react when the estimate of ACTUAL emissions changes (in this case by 50%)!

Does CARB think this is legal?

Do any other attorneys out there think this is legal?

Comment 211-3:

CEQA Still Not Analyzed

The SSN states:

These 15-day changes do not change the implementation of the regulation in a way that affects the impact conclusions identified in the Draft Environmental Analysis (EA) included as Appendix D of the Staff Report. As described above, the second 15-day changes to the Proposed Amendments consist of correcting an error in Table 1 of Attachment 2 to the 15-day notice dated March 27, 2023, and correcting the corresponding values in Table III.1 and Table VI.1 and the narrative of Attachment 2. Since these values were not used in the evaluation of environmental impacts in the Draft EA, staff has determined that these changes would not require new or modified compliance responses and would not result in any new reasonably foreseeable significant environmental impacts or substantially increase the severity of an already identified environmental impact in the Draft EA. Therefore, no additional environmental analysis or recirculation of the Draft EA is required. (Emphasis added). SSN at pages 21-22.

The statement itself would suggest that a completely re-issued and corrected table has no significance; however, the comment that "these values were not used in the evaluation of environmental impacts in the Draft EA," is troubling. As set forth in my April Letter, the Draft EA entirely missed the issue of the increase of hexavalent chromium emissions in California that would result from adoption of the Proposed Amendment due to the necessary increase

of diesel truck traffic in and out of the state to ship parts that could no longer be produced in California.⁴ A direct comparison of actual emissions from all sources including chrome plating facilities, as produced in the ISOR, as revised in the FSN, and then revised in the SSN, is absolutely imperative for the decisionmaker to understand and properly compare how an affirmative or negative decision on this ATCM will affect human health and the environment in California going forward. If we look to the Draft EA, one of the project's primary objective states:

It is the public policy of the State that emissions of toxic air contaminants should be controlled to levels which prevent harm to the public health. (Health & Saf. Code § 39650). Draft EA at page 9.

The admission made in this SSN that the Draft EA failed to use this information in its evaluation represents a fundamental flaw that cannot be ignored by decisionmakers, particularly in light of the project objective and statutory requirement.

CARB's rulemaking process is fatally flawed because it has failed to recalculate the environmental impact analysis with the revised emissions data.

⁴ Of course, there would also be a concurrent increase in air, rail, and ship traffic, all of which would cause hexavalent chromium emissions in the largest category of hexavalent chromium emissions, mobile sources.

Response 202, 211-3 and 213-2:

Please see the response to Comment 202-1, 211-1 to 211-4, and 213-1 in the Response to Comments on the Draft EA. Please also see Master Responses 1, 9, and 11. CARB staff made no changes to the Proposed Amendments based on the received comments.

c) Regulation Development Process/APA

Comment 213-3:

With its revised emissions data at the eleventh hour (even though CARB has had access to this data and ignored the comments from industry over the past three years), CARB has failed to provide a meaningful opportunity to comment on the basis and justification of the rule.

On November 29, 2022, CARB staff released the draft ATCM and then almost immediately withdrew Appendix B Table 1 because stakeholders quickly noted that it was incorrect. The reply was that corrections would be made in the 15-day document. On March 28, 2023, the public saw the first 15-day document. Stakeholders were prevented from being able to review the "correct" data that is fundamental to the entire ATCM update for four months. That first draft table was essentially illegible and this had been acknowledged.

Staff released the draft ATCM document on November 29, 2022. In Appendix B there are Tables 1&2 that list facility emissions inventory calculations and source tests results averaged by process, respectively. Immediately upon release stakeholders on all sides recognized the Table 1 data was severely flawed. The most obvious error was the misalignment of data in the rows of information, but there were many errors that couldn't be teased out until this first major flaw was corrected. Staff claimed they would correct this table in the 15-day documents. The assumption was that they would correct all the flaws. No one had correct information at the January 27th, 2023 Public Hearing.

March 27, 2023 staff released their 15-day document. Attachment 2 Table 1 was supposed to replace the original Table 1 of Appendix B. The new table was still severely flawed. They corrected the mismatch of facility rows and corresponding data, but by matching the facility amp-hrs with the June 2021 list it showed many errors. These are errors that staff could have, and should have, caught because they have the full data set. The errors we could find were reported during the comment period. But stakeholders were robbed of time to review the data, the two months between the November release and the January Public Hearing, and the additional two months after the hearing until the March release. For these four months the interested parties couldn't review the whole proposed rule package for accuracy.

No one could comment on the original useless data and then when they got the data, they couldn't comment on anything but the corrections to the data. Staff repeatedly stressed that the comments submitted during 15-day document comment period were restricted to only the few corrections that were made, not the corrected document as a whole. We wanted a true, correct, and whole document and our comments reflect that.

A second 15-day document was released April 26, 2023 with another "corrected" table. The only substantive correction was the attention paid to the emissions rate for hard chrome plating. The average emission rates were calculated earlier in Table 2 of Appendix B. The specific correction apparently fixed a typo in the emissions rate from 0.0000588 mg/amp-hr to 0.000588 mg/amp-hr. The chromic acid anodize Average Source Tested Emission Rate is still considered 0.000000029 mg/amp-hr. This is ridiculously low. If this were true then all the anodizers combined would emit 0.127 mg per year and should be exempt. We mentioned this before and it's still not been corrected. We don't want skewed facts, in any direction. Again, we are looking for the truth and there are still more errors, but only the comments that address the very narrow prior corrections will be considered.

We requested the corresponding source test emissions factor data verbally and in writing several times over 2 years. We've been assured the data is coming, but we have not received all this data. Then only recently we were told that we needed to submit an official information request, which we did the same day. We recently received a 10-day letter informing us that in 30 additional days we will be provided the information we've requested, or an estimate of when we can expect these records, or the reasons, if any, why these records are being withheld.

Response 213-3:

Please see Master Response 11. CARB has acknowledged the errors in the emission inventory identified in the comment and corrected them in the First 15-Day and Second 15-Day Notices. This was done in accordance with the Administrative Procedures Act.

Please see Master Response 13. To ensure an open and transparent rulemaking, CARB staff have engaged in an extensive public process since the development of the Proposed Amendments. On June 8, 2018, CARB staff issued a regulatory notice to inform the public of the start of the rulemaking process to amend the 2007 Chrome Plating ATCM. Since that time, CARB staff conducted seven technical workgroup meetings and two public workshops to solicit stakeholder feedback and discuss regulatory concepts, costs, technology alternatives, emission inventory estimates, health and environmental impacts, compliance, and source testing results. Staff posted information regarding these technical working group meetings and workshops and any associated materials on the chrome plating website and

distributed notice of these meetings through the chrome plating list serve, which includes over 3,400 recipients.

In addition, CARB staff conducted numerous meetings and phone calls with members of impacted communities, environmental justice advocates, local air districts, industry stakeholders (including owners and operators of chrome plating facilities, chemical fume suppressants suppliers, equipment manufacturers (OEMs), and trade associations). CARB staff also had discussions with other state agencies, the U.S. Environmental Protection Agency (U.S. EPA), and other interested parties. CARB staff visited about 30 chrome plating facilities to learn more about their business operations and to better understand potential implementation challenges associated with the Proposed Amendments. A detailed summary of all stakeholder outreach activities is included in Chapter XII and Appendix E of the ISOR.

As discussed in Master Response 11, throughout the rulemaking process, beginning prior to the first public workshop, CARB staff repeatedly asked members of industry to provide any and all data that would help in the development of the regulatory requirements. This includes providing source test data. Industry was not forthcoming in providing source test data that could be verified.

As discussed in Master Responses 4 and 5, CARB staff was receptive to many of the industry concerns throughout the rulemaking process, such as extending phase-out dates for both decorative and functional plating operations, adding the technology reviews, and other adjustments to the Proposed Amendments.

In response to comments that CARB has not provided requested information to stakeholders, CARB staff have responded as required by the law to Public Records Act requests submitted by members of industry. The Metal Finishers Association of California submitted a Public Records Request on July 18, 2022, and CARB staff have been producing records on a rolling basis in response. In addition, CARB staff received a public records act request from a member of industry on April 11, 2023, and produced the source tests requested on May 2, 2023, prior to the submission of the comment indicating that records had not been provided. CARB staff followed up with the requestor on May 17, 2023, who then realized that the source tests had gone into his spam box.

CARB staff made no changes to the Proposed Amendments based on the received comments.

2. Irrelevant Comments

200, 205, 206, 207, 208, 209, 210, 211-1, 211-4, 212, and 213-1.

Response 200 et al.:

These comments are outside the scope of this rulemaking, irrelevant, duplicate, or not specifically directed at the changes in the Second 15-Day Notice; therefore, CARB is not required to respond. CARB staff made no changes to the Proposed Amendments based on the received comments.

E. Comments Received at the Board Hearing on May 25, 2023

1. Comments in Support of the Proposed Amendments

a) General Support

CARB received broad support from a range of organizations and stakeholders. The following commenters support the objectives and goals of the Proposed Amendments: 218-1, 220-5, 221-1, 222, 235-1, 238, 239-1, 241-1, 242-1, 243-1, 247-1, 249-1, 251-1, 252-2, 253-1, 255-1, and 256-1.

Summary of Comment 218-1 et al.:

These comments urge the Board to adopt the Proposed Amendments that require decorative and functional plating facilities in California to eliminate toxic hexavalent chromium emissions over time by switching to less toxic hexavalent chromium alternatives. Commenters note that trivalent chromium is a less toxic alternative to hexavalent chromium in decorative plating applications and can be used without toxic PFAS-based fume suppressants. Commenters state that over half of the chrome plating facilities in California are near a school, church, or neighborhood and recognize that the Proposed Amendments help address the cumulative environmental burden from toxic air contaminants in these communities. Many commenters are concerned that hexavalent chrome emissions from the plating industry are impacting their health, the health of communities, and the health of employees in the chrome plating industry. Commenters note that hexavalent chromium can persist in the environment and that chrome plating facilities can leave behind hexavalent chromium contamination that is hard to clean up, affecting future communities and water quality. Commenters recognize that the Proposed Amendments will improve public health and reduce the cumulative environmental burden from toxic air contaminants in communities with chrome plating facilities. Comment 222 also notes that last year, the Legislature approved \$10 million, upon adoption of the Proposed Amendments, to assist with the transition away from the use of hexavalent chromium and lessen the impacts on small businesses.

Response 218-1 et al.:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. Please see Master Responses 2, 7, and 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 248:

I just want to thank the Board and staff for the work and the diligence, you know, spending time with the hard chrome plating facilities and understanding the difficulties, in particular that the airlines have with respect to FAA regulations and how we have to handle airplane parts. And we really don't have those other alternatives available to us, so we appreciate that recognition. We will look forward to working with you in the future. Certainly, we will be happy to look at the possible alternatives as they -- as they come along. But in the meantime, we definitely appreciate the efforts that you've made to hear us and understand the technology and what we are required to do.

Response 248:

Thank you for your comments and support. CARB looks forward to working with United Airlines during the technology review process. CARB staff made no changes to the Proposed Amendments based on the received comments.

b) Comments in Support of More Stringency

The following comments expressed related concerns: 218-2, 220-2, 221-7, 235-2, 239-2, 240, 241-2, 242-2, 243-3, 244-1, 247-2, 251-7, 253-2, 255-2, 256-2, and 257-2.

Summary of Comment 218-2 et al.:

These comments state that community exposure to emissions from chrome plating facilities will persist until hexavalent chromium is completely phased out of chrome plating operations. Commenters request strong enforcement to ensure that all chrome plating facilities comply with their existing permits. These comments note that CARB has identified several chrome plating facilities that are in violation of their existing permits and ask that CARB conduct fence-line monitoring and work with Districts to conduct fence-line monitoring at chrome plating facilities to verify compliance with the Proposed Amendments and ensure that hexavalent chromium emissions are being reduced according to the phase out timeline.

Response 218 et al.:

Thank you for your comments and support. CARB staff appreciates the support for the Proposed Amendments' goals of improving public health and reducing emissions from chrome plating facilities. We will take your suggestions into consideration. CARB staff made no changes to the Proposed Amendments based on the received comments. However, CARB has included a commitment to work closely with the Districts on enforcement and implementation of the Proposed Amendments in Resolution 23-16, which was adopted by the CARB Board as part of their approval of the Proposed Amendments at the second Board Hearing.

The following comments expressed related concerns: 220-1, 221-2, 243-2, 249-2, 251-2, 252-1, and 257-1.

Summary of Comment 220-1 et al.:

These comments state that the Board should keep the originally proposed dates for the phase out of hexavalent chromium from the chrome plating industry and not weaken the Proposed Amendments by extending the phase out timeline. Commenters note that hexavalent chromium should be phased out by 2025, not 2030, since trivalent chromium is an available alternative for decorative chrome plating applications.

Response 220-1 et al.:

Please see Master Responses 2, 5, and 6. The Proposed Amendments balance industry's concerns with public health by ensuring emission reductions while allowing sufficient time for industry to transition to alternative technologies. The Board evaluated the phase out timeline for decorative chrome facilities and determined that a phase out date of 2027 with an alternative phase out pathway date of 2030 for facilities that implement building enclosure requirements is reasonable in consideration of the factors in Health and Safety Code section 39665.

The following comments expressed related concerns: 220-3, 221-3, 244-2, 251-3, 255-3, and 257-3.

Summary of Comment 220-3 et al.:

These comments state that CARB should work with the DOD's Strategic Environmental Research Defense Program (SERDP) to find alternative metal coatings that can replace hexavalent chromium in functional plating applications.

Response 220-3 et al.:

Please see Master Responses 5 and 6. All stakeholders, including DOD's Strategic Environmental Research Defense Program are encouraged to participate in the technology review process. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 220-4 and 257-4:

CARB should work with the attorney general on an enforcement initiative directed at the chrome plating industry and the damage they have done to the both the natural resources and public health of the state.

Response 220-4 and 257-4:

CARB staff will take your suggestions into consideration. CARB staff made no changes to the Proposed Amendments based on the received comments. However, CARB has included a commitment to work closely with the Districts on enforcement and implementation of the Proposed Amendments in Resolution 23-16, which was adopted by the CARB Board as part of their approval of the Proposed Amendments.

Comment 221-4 and 251-4:

CARB needs to adopt a chrome plating industry mitigation fee for every pound of hexavalent chromium used, and the creation of a mitigation fund to address public health exposure, public health impacts, and environmental impacts.

Response 221-4 and 251-4:

CARB staff will take your suggestions into consideration. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 221-5 and 251-5:

CARB needs to adopt stricter air quality safety standards for decorative chroming to prevent public exposure, public health, and environmental impacts.

Response 221-5 and 251-5:

Please see Master Responses 2, 4, and 6. CARB staff will take your suggestions into consideration. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 221-6 and 251-6:

CARB needs to adopt stricter standards for workers safety standards for the decorative chrome plating industry, because they are there working on the spot, to prevent worker exposure and public health impacts.

Response 221-6 and 251-6:

CAL/OSHA has jurisdiction over worker safety standards. However, the phase out of hexavalent chrome from chrome plating operations will have the added benefit of reducing the risk to a facility's employees. CARB staff made no changes to the Proposed Amendments based on the received comments.

2. Comments in Opposition of the Proposed Amendments

a) Health Impacts

Comment 216:

For the past 54 years, starting in 1969, I have been a metal finisher and my company employs 85 full time hard working people and 25 sub contractors.

Additionally, I am active in our professional metal finishing association by being a Board Member for the last 31 years, and our association has recently sponsored an informational booth for Earth day 2023 at the Hyperion Water Treatment plant in Playa Del Rey CA.

CARB is proposing to stop Hex Chrome plating even though we have installed state of the art engineered environmental controls and have provided scientifically validated air source testing that documents our controls are really doing what is prescribed.

I am 75 years old and when I was in high school I was growing Cannabis for personal consumption. We all knew it was not healthy and certainly NOT legal. I'd like to enlighten CARB to the air and noise pollution that established commercial cannabis growers in Downtown LA spew into the air from their growing operations as follows:

- The smoke from Cannabis is permeating most of DTLA including the local CVS drug store across from my business where it is sold in the same building.
- To supply their "grow lights" with power, that establishment uses a 200 kilowatt diesel generator running 24 hrs a day 365 days a year for the past 3 years.
- The noise pollution from that generator exceeds 85 decibels and
- The drippage of oil that from that diesel motor covers the ground around the generator and has been washed into our stormwater system and into the oceans during the past 3 years of rain

This growing business only employees 2 full time gardeners and yet contributes tons of harmful emissions. Another grower just 1/4 mile west of our plating shop utilizes two 200 Kilowatt generators making even more pollution and noise and this equipment also blocks the new city of DTLA handicap side walk just finished. The generators are protected by an installed chain link fence right where people have to walk forcing them to enter into the busy street for their safe passage.

How is it that this is allowed and Hex chrome plating will be stopped.

Chrome plating emissions have not killed anybody but cannabis consumption has destroyed so many of our children's ambitions and futures and leads to ever increasing consumption of hard core drug abuse from Meth and Cocaine. We even tax the product that is a poison and drug that kills destroys the lungs of children and adults too that have to re-breathe the second hand smoke. Marijuana has many of the same toxins, irritants, and carcinogens as tobacco smoke.

So, I ask if we have no proof that hex chrome kills but we all know that marijuana and the violence associated with its distribution and money laundering operations kills and this also is destroying our children's ambitions and many adults as well why we are singling out hex chrome and do nothing about Cannabis? I feel this is all political and really no health benefits will be achieved. I ask you to REGULATE NOT ELIMINATE IF YOU BELIEVE THAT MORE IS REQUIRED

Our association supports the continued control of hex emissions but to do NOTHING ABOUT CANNABIS IS A CRIME TO THOSE WHO YOU ARE SWORN TO PROTECT- OUR COMMUNITIES AND OUR CITIZENS

Response 216:

Please see Master Responses 2, 8 and 14. CARB does not have authority to regulate consumption of cannabis, methamphetamines, or cocaine. CARB's role is to minimize the impact of pollutants and toxins in the air to the greatest extent feasible. CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 232-2 and 234-1.

Summary of Comments 232-2 and 234-1:

These comments state that chrome plating facilities are not harming community health because the emissions from chrome plating facilities are so low. Comment 232-2 states that there is not a lot of evidence that hexavalent chromium emitted at such low levels, 0.14 pounds annually for the entire California chrome plating industry, will impact human health.

Response 232-2 and 234-1:

Please see Master Responses 1, 2, 11, 12 and 14. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 237-2:

More people -- there are more people with a positive -- positive effects from hexavalent chrome than there are negative effects. It's -- everybody is touched by hexavalent electrolytic plating. Everybody, no matter where you are, it may be in the engineer car, it may be in the toaster on your -- on your dashboard, or the sinks, fixtures. Everybody is touched by hexavalent chrome.

Response 237-2:

Please see Master Responses 2 and 6. CARB staff understand that chrome-plated products are used commonly throughout society. The Proposed Amendments allow chrome plating facilities to continue to produce these products with alternative technologies.

b) Emissions Inventory

The following comments expressed related concerns: 217-1, 225-3, 226-2, 228-1, 229-1, 233-1, and 254.

Summary of Comment 217-1 et al.:

These comments state that the Proposed Amendments are based on incorrect data. Commenters note that emissions data is overstated and therefore the health risk data is inaccurate, too. Commenters state that CARB should reassess the Proposed Amendments because the assessment of the emissions data is flawed and note that, with CARB's corrections of the mathematical errors, the resulting emissions data is still an overrepresentation of chromium emissions from chrome plating facilities in California. Commenters reiterate that annual emissions from chrome plating facilities are very low. These comments state that correct data is important to this rulemaking, especially given the impact the Proposed Amendments will have on businesses, their employees, customers, and supply chain, and request that the Board demand correct data from staff before voting, so they can make a truly informed decision and not proceed with rulemaking based on bad data.

Response 217-1 et al.:

Please see Master Responses 1, 8, 11, and 12.

c) Hexavalent Chromium Alternatives

The following comments expressed related concerns: 219-2, 228-2, 230-1, and 236-1.

Summary of Comment 219-2 et al.:

These comments state that trivalent chromium is not an acceptable replacement for hexavalent chromium in decorative chrome plating processes, noting that the finish does not meet specifications and will not be accepted by customers. Commenters note that trivalent chromium does not provide the durable, anti-corrosive properties that hexavalent chrome provides in the same product, like in faucets. Commenters note that trivalent chromium is not the same color as hexavalent chromium and mention that the color difference negatively impacts customer acceptance, especially in the classic car restoration and custom car industries.

Response 219-2 et al.:

Please see Master Response 6. CARB staff made no changes to the Proposed Amendments based on the received comments.

d) Suggestions for Amendment Alternatives

The following comments expressed related concerns: 217-2, 225-1, 226-5, 227-2, 228-3, 230-4, 236-3, 245, and 246-3.

Summary of Comment 217-2 et al.:

These comments state that CARB should adopt SCAQMD's Rule 1469 instead of prohibiting the use of hexavalent chromium. Commenters note that CARB participated in SCAQMD's

rulemaking, but the Proposed Amendments ignore the provisions of Rule 1469. Commenters also note that the chrome plating industry in SCAQMD's jurisdiction have already invested in Rule 1469 and have implemented effective control measures, which further reduce hexavalent chromium emissions. Commenters state that Rule 1469 protects the public and environment while keeping businesses in operation.

Response 217-2:

Please see Master Response 15. CARB staff appreciate the emission reductions from chrome plating facilities within SCAQMD's jurisdiction that have occurred a result of the implementation of Rule 1469. However, CARB staff have determined that more must be done to protect public health from this extremely toxic carcinogen. In AB 211, the Legislature declared that a transition away from hexavalent chromium plating is "necessary" and stated its intent to enact future legislation that would make \$10 million available to CARB to assist with the transition away from the use of hexavalent chromium, and to make this funding available upon CARB's adoption of a rule to fully eliminate hexavalent chromium at all decorative and functional chrome plating facilities and chromic acid anodizing facilities statewide. The Budget Act of 2023, AB 102 (Chapter 38, Statutes of 2023), appropriated \$10 million to transition away from the use of hexavalent chromium in chrome plating operations, including supporting small businesses that convert to trivalent chromium or an equally health protective alternative.

Additionally, throughout the Rule 1469 development process, community members expressed concern over enforceability of Rule 1469 and that the rule did not do enough to reduce public exposure to hexavalent chromium. At the May 2023 CARB Board meeting, Board Member, Gideon Kracov, also pointed out that we are further along with trivalent chromium technology than we were when Rule 1469 was adopted. Additionally, several board members highlighted that, because there is no safe level of exposure to hexavalent chromium, a phase out was necessary.

The following comments expressed related concerns: 226-4, 229-2, 233-2, and 234-3.

Summary of Comment 226-4 et al.:

Many comments state that CARB should create an emission-based regulation for hexavalent chromium plating processes, not a regulation that prohibits the use of hexavalent chromium. Commenters state that hexavalent chromium emissions from the chrome plating industry have already been reduced by greater than 99.9% because of the stringent hexavalent chromium emission requirements in California. Commenters state that the chrome plating industry is willing to implement a lower, attainable emission limit to protect community health, the environment, and the industries that require hexavalent chromium.

Response 226-4 et al.:

Please see Master Response 15. CARB staff appreciate the emission reductions from chrome plating facilities within SCAQMD's jurisdiction as a result of the implementation of Rule 1469. However, hexavalent chromium is extremely toxic, and it only takes a small amount to have serious effects on human health (see Master Response 2). Although certain combinations of control methods and devices can significantly reduce stack emissions, they cannot eliminate them entirely. In addition, while there are some steps that can be taken to reduce fugitive emissions, those steps are also not sufficient to protect public health (see Master Response

12). CARB staff made no changes to the Proposed Amendments based on the received comments.

The following comments expressed related concerns: 226-3 and 227-1.

Summary of Comments 226-3 and 227-1:

These comments suggest that CARB amend the Proposed Amendments to allow chrome plating facilities that are not near sensitive receptors and not in disadvantaged communities to continue using hexavalent chromium. These commenters also suggest that chrome plating facilities should be allowed to relocate to non-residential areas.

Response 226-3 and 227-1:

Please see Master Response 14 for information on why the Proposed Amendments apply statewide and do not provide exceptions for facilities that are not near sensitive receptors or in disadvantaged communities. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 237-1:

I think you ought to take the time frame of our shutdown in cutting out chrome to develop reasonable and measurable numbers, and in that time frame, let industry develop controls to meet those measurable limits.

Response 237-1:

Please see Master Responses 1 and 2. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 237-4:

But there's many behind-the-scenes use of hex chrome, like military and other areas that are just not seen, but the manufacturing world uses hexavalent chrome. So take this time frame to develop measurable rules. Let industry figure out how to meet those rules and let's get on with business.

Response 237-4:

Please see Master Responses 5 and 6. CARB staff understand that chrome plated products are used commonly throughout society. The Proposed Amendments allow chrome plating facilities to continue to produce these products with alternative technologies. CARB staff made no changes to the Proposed Amendments based on the received comments.

e) Emissions

The following comments expressed related concerns: 223 and 230-5.

Summary of Comments 223 and 230-5:

These comments state that add-on air pollution control devices effectively reduce the hexavalent chromium emissions leaving chrome plating facilities. These commenters state that, with add-on air pollution control devices, hexavalent chromium emissions measured at

chrome plating facilities are zero detectable or extremely low and argue that hexavalent chromium should not be phased out of chrome plating operations.

Response 223 and 230-5:

Please see Master Responses 2, 11, 12, and 15. Staff notes that non-detects or non-detects reported as zero values do not necessarily mean zero emissions. Rather, it is common practice to assume that, in the case of a non-detect, the value of the concentration is equal to half of the detection limit of the instrument. For example, a method detection limit of 0.04 ng/m³ would be presented as half of that, or 0.02 ng/m³, which equates to a cancer risk of approximately 7 chances per million. Notably, this comment does not account for fugitive emissions. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 232-1:

The idea is that the -- that no matter what data that I have from emissions information that we've gotten, that the only number that anybody gives a dam about is zero. And the thing is is that if you extrapolate that to any other industry, every other industry, we will grind to a complete halt. This is not appropriate logic. And if this was an objective decision-making process, you'd look -- you'd be looking for the truth.

Response 232-1:

Please see Master Responses 2, 7, and 8. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 234-4:

You know, we talk about fugitive emissions. Well, they're not ghosts. Let's find out where they're at. Let's control them, simple. You know, we talk about actual numbers of emissions, we know what they are. You know we're not going to manufacture more in California. On the contrary, it's going away, so emissions aren't going to increase in our industry. So what we have, we can control. We have jobs. It's crucial that we keep it here. Remember, this is infrastructure. This is air safety. This is defense that we're talking about. You know, we're not -- we're not talking about just any -- anything that anybody can do.

Response 234-4:

Please see Master Responses 1, 5, 6, 8, 12, and 15. CARB staff made no changes to the Proposed Amendments based on the received comments.

f) Economic Impacts

The following comments expressed related concerns: 225-2, 226-1, 230-2, 231, 234-2, 236-2, 237-3, and 246-1.

Summary of Comment 225-2 et al.:

Many comments state that prohibiting the use of hexavalent chromium in chrome plating operations will cause chrome plating facilities to lose the business of customers that require hexavalent chromium plating services. These comments note that the loss of business will lead to the closure or out-of-state relocation of California chrome plating facilities and unemployment in the chrome plating industry and other industries that depend on chrome

plating. Commenters also note that the Proposed Amendments will damage California's economy by sending revenue out of state.

Response 225-2 et al.:

Please see Master Response 8. Many of CARB's regulations rely on the development of technology to achieve emissions reductions. The Proposed Amendments provide both decorative and functional chrome plating facilities with time to identify or innovate appropriate replacements so that they can continue to provide their services and employ staff (see Master Response 4). Please also see Master Response 7. CARB staff made no changes to the Proposed Amendments based on the received comments.

g) Environmental Impacts

Comment 230-3:

My entire business has worth until this ATCM passes and then my property is a hazardous waste facility. Who's going to clean that up? Am I going to be deemed liable to clean up a facility that the CARB Board made a hazardous waste facility?

Response 230-3:

Any hazardous waste material generated by chrome plating facilities is the responsibility of the owners and operators of those facilities, including the proper handling and disposal of those materials. Nothing in the Proposed Amendments changes the status of a facility in this regard. CARB staff made no changes to the Proposed Amendments based on the received comments.

h) Incentive Funding

The following comments expressed related concerns: 219-1, 224, and 246-2.

Comment 219-1 et al.:

These comments recommend using the \$10 million that the Legislature appropriated in AB 211 to buy chrome plating businesses and close them down.

Response 219-1 et al.:

The funding that the Legislature stated their intent to make available in AB 211 can only be used to provide incentives for small businesses to transition away from hexavalent chromium, grow customer awareness and acceptance of trivalent chromium plating products, and to further alternative technologies. These funds cannot be used to purchase businesses outright. Please see Master Response 7 for more information on the AB 211 funds. CARB staff made no changes to the Proposed Amendments based on the received comments.

Comment 250:

Another thing, how they can find out the \$10 million to put the new technology and get out from the hex chrome also too. And what about the -- who gives the expenses -- all the expenses going to the -- to get rid of the hex chrome, who is going to give all the money to us also too? So we're losing millions of dollars going to the drain. Instead of that, we don't get anything, and how they can protect us on this -- all this coming for the new expenses also too. Some industry people have already put the new trivalent chrome. What about them?

What they are going to give for them? And so what do they spend the money for their new technology also too. So they are to figure out all of the points also too.

Response 250:

Please see Master Response 7. CARB staff made no changes to the Proposed Amendments based on the received comments.

IV. Peer Review

Health and Safety Code section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. Specifically, the scientific basis or scientific portion of a proposed rule may be subject to this peer review process.

CARB determined that the Proposed Amendments did not contain a scientific basis or scientific portion subject to peer review, and thus no peer review as set forth in section 57004 needed to be performed.

The Proposed Amendments require decorative and functional plating facilities in California to eliminate toxic hexavalent chromium emissions over time by using alternatives to hexavalent chromium. Before hexavalent chromium is phased out, the Proposed Amendments also require decorative plating facilities to comply housekeeping practices and best management practices (and building enclosure requirements for facilities that comply with the alternative phase out pathway) to reduce fugitive hexavalent chromium emissions. Prior to the phase out, functional chrome plating facilities must comply with lower emission limits as well as housekeeping requirements, best management practices, and building enclosure requirements to reduce fugitive emissions.

Furthermore, the Proposed Amendments require CARB to complete two technology reviews on alternatives to hexavalent chromium in functional plating. In proposing and adopting the Proposed Amendments, CARB considered the technology that is available or can be developed and implemented to replace hexavalent chromium in plating operations within the proposed timeframes. CARB's consideration in proposing and adopting the Proposed Amendments did not involve the application of novel scientific findings or the development of scientific theories. In addition, the requirements of the Proposed Amendments do not establish "a regulatory level, standard, or other requirement for the protection of public health or the environment," such as an ambient air quality standard or toxic exposure level. The scientific studies and assessments used to analyze the potential public health and environmental impacts of the Proposed Amendments, such as the findings that hexavalent chromium is a toxic air contaminant, were developed previously and subject to public review.